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ABSTRACT

This curriculum was developed for Job Corps Centers to introduce the principles of information technology. The goal was to make it flexible but comprehensive, and a variety of teaching strategies related to real-life situations in different types of businesses that students might face in a work environment were incorporated. Each module consists of an introductory section and a set of lesson plans. The introductory section includes learner program outcomes, prerequisites, estimated total class time, outside reading/other resources, module overview, and lesson plan titles. Each lesson plan includes up to 12 sections that prepare the instructor to use the curriculum, including lesson overview, lesson goals, prerequisites, content required, resources, materials and equipment checklists, teaching strategy, HOT (Higher Order Thinking) activities, assessment methods, and instructor evaluation and comments for improvement. The following modules are included: (1) Everything You Always Wanted To Know about Computers But Were Afraid To Ask--Part 1; (2) Developing a Newsletter; (3) In Search of Market Competition or Surf City, U.S.A.; (4) Reach Out and Touch; (5) Creating Budgets, Budgets and More Budgets; (6) Developing Databases; (7) Developing and Distributing an Annual Report; (8) Preparing an Effective Presentation; (9) Taking Another Look; (10) Creating a Logo; (11) Taking It On-Line; (12) Making It with Multimedia; (13) Understanding Computer Basics; (14) Everything You Always Wanted To Know about Computers But Were Afraid To Ask--Part 2; (15) Upgrading Your Computer Equipment--Part 1; (16) Let's Get Together: Getting Your Computer Connected; (17) Customizing Your "Windows"; (18) You Asked for It; You Got It; Now Figure out How To Make It Work!; (19) Designing and Developing New Programs; and (20) Upgrading Your Computer Equipment--Part 2. (MES)

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ED 447 796

IR

Secondary Curriculum

PREPARATORY PROGRAM FOR INFORMATION TECHNOLOGY

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Read Me First

This curriculum was developed specifically for Job Corps Centers to introduce the principles of Information Technology. The goal was to make it flexible but comprehensive. A variety of teaching strategies related to real life situations in different types of businesses that students might face in a work environment was also incorporated in the curriculum.

Module Format:

Each module consists of an introductory section and a set of lesson plans. The introductory section includes Learner Program Outcomes, Prerequisites, Estimated Total Class Time, Outside Reading and Other Resources, Module Overview, and Lesson Titles.

It is recommeneded that you read the first two pages of each module before using the lesson plans.

The six introductory sections are described below:

- **Learner Outcomes**: These are the goals of the module. Throughout the module students participate in learning experiences designed to accomplish the identified skills or content.
- **Prerequisites:** Some modules may be used out of sequence. This section identifies the information or previous modules necessary for success. There are special notes to instructors about the planning time required to prepare for teaching the module.
- **Total Class Time:** An approximate time is suggested for each module. Classes are based on a two-hour session. However, instructors must decide how much time their class needs to accomplish the educational goals.
- **Outside Readings and Other Resources:** A variety of materials is listed that can be used both inside and outside of the classroom. Instructors and students can broaden their exposure to events outside the classroom and tie lessons to the real world.
- **Module Overview:** A one-page overview is provided on the second page of every module and describes the lesson contents. This page is designed as a handout for students that introduces the lesson topics to them. *Read this before teaching!*
- **Lesson Plan Titles:** Each topic is listed by title for planning purposes.

Lesson Plans: Each lesson plan includes up to 12 sections that prepare the instructor to use the curriculum. Plans include Lesson Overview, Students Will Demonstrate the Ability to -- , Prerequisites, Content Required, Resources, Materials and Equipment Checklists, Teaching Strategy, HOT Activities, Assessment Methods, and Instructor Evaluation and Comments for Improvement.

- **Lesson Overview:** The overview introduces student activities.
- **Students Will Demonstrate the Ability to -- :** Specific competencies that students are expected to demonstrate after completion of this lesson are listed here. Each competency is also designated with codes referring to the Technical or Foundation Components and Employability Skills to which it relates. A summary of the codes used is listed on the next page.
- **Prerequisites:** Any previous lessons or other experience essential to successfully learning the current lesson is identified.
- **Content Required:** A brief outline of the material taught during this lesson is provided.
- **Resources:** Specific references that enhance understanding of lesson content are listed with web sites being among the most important of these because they feature the most current information.
- **Materials and Equipment Checklists:** Items required to conduct learning activities including previous student work are listed. Many of the lessons include activity sheets or content notes for the students. They are flagged in the upper left corner with their module file name (*JMODx-x-x*). Instructors may need to review and customize these materials because of variations in software availability, information, and product updates.
- **Teaching Strategy:** The strategy is designed as a script for the instructor to follow during the class. It lists sequenced activities and discussion material or questions for the lesson. *The strategies are designed to guide rather than dictate.* Instructors are encouraged to modify these activities based on the abilities or special requirements of their classes. Sample handouts using a fictitious company, the International Recording Company (IRCO), are often provided to demonstrate how realistic learning experiences can be simulated.
- **HOT Activities:** Higher Order Thinking (HOT) activities provide additional strategies essential to acquire all of the learning competencies. HOT activities and teaching strategies address knowledge content, skills, and practice in analysis, synthesis and evaluation processes. Instructors may enhance or modify these activities during class.
- **Assessment Methods:** A range of assessment methods based on practices typical in the IT industry is provided. The overview of each module defines the deliverables to be produced by the students for their portfolios. Assessments address competencies, deliverables, and other behaviors or habits that students need to be effective in any work environment.
- **Instructor evaluation and comments for improvement:** This space is provided for the instructors to make personal notes about the changes or suggestions they would like to make to the plan.

Codes for Learner Outcomes - Here are the codes used in the lesson plans:

	(T) Technical Components
CT	Computer Trends in Business and Society
DB	Database
EM	E-mail
GS	Graphics Software
HW	Hardware Installation/Configuration
INT	Internet
NET	Network Technologies
PC	PC Principles and Operations
PRE	Presentation Software
PRG	Programming
SW	Software Installation/Configuration
SPS	Spreadsheet
WIN	Windows
WP	Word Processing

	(F) Foundation Components
ANL	Analysis
D&D	Design/Development
D&BC	Documentation and Business Communication
F&CS	Facilitation/Customer Service
O&D	Organization/Delivery of Presentations
PS&T	Problem Solving/Troubleshooting
PM	Project Management
RES	Research
SL	Self-Learning
TM	Task Management
TW	Team Work
T&V	Testing/Validation
WPS	Workplace Skills

	Employability Skills
ES-1	Dress appropriately for work.
ES-2	Arrive for work on time.
ES-3	Respond appropriately to supervision.
ES-4	Follow directions.
ES-5	Listen effectively.
ES-6	Ask for clarification when further information is required.
ES-7	Share information and explain procedures to another person.
ES-8	Take initiative.
ES-9	Satisfy customers.
ES-10	Work as a member of a team.
ES-11	Work harmoniously with diverse races, sexes, ages and cultures.
ES-12	Troubleshoot and solve problems.
ES-13	Access and use information from manuals and computers.
ES-14	Maintain good hygiene.
ES-15	Stay on task.
ES-16	Maintain tools and equipment properly.

Preparatory Program for Information Technology

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Module 1:
Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 1

Module 1 - Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 1

Learner Outcomes:

PC Principles and Operations/Windows/Internet/E-mail

1. Describe the primary PC components and how they work together.
2. Perform basic personal computer operations in a Windows environment.

Internet/E-Mail/Word Processing

3. Use basic functions of a web browser and e-mail system.
4. Use basic functions of a word processing program

Team Work/Workplace Skills

5. Organize and work in a team setting.
6. Accept responsibility for one's own behavior and be aware of its impact on others.

Self Learning

7. Identify various learning styles and understand one's own learning style.
8. Recognize expertise and learn from others, and demonstrate collaborative decision-making.

Documentation and Business Communication

9. Use effectively various communication techniques and formats.
10. Communicate (orally and in writing) clearly and concisely to the appropriate audience.

Prerequisites: None.

Total Class Time: Approximately 20 hours

Outside readings or other resources:

The Soul of a New Machine, Tracy Kidder

The Cuckoo's Egg: Tracking a Spy Through the Maze of Computer Espionage, Clifford Stoll

The Invisible Computer: Why Good Products Can Fail, the Personal Computer Is So Complex, and Information Appliances Are the Solution, Donald Norman

Module 1 - Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 1

Module overview:

As the first module in this series, the following lessons introduce you to basic computer terms and uses. Each lesson allows you to experience first-hand some of the powerful capabilities of computers. All of the modules were designed to help you understand how computers work and how computers are used by people all over the world in a variety of jobs. By using computers to gather and analyze information, millions of people are able to make better decisions more quickly.

Computers are now a part of our everyday lives. You cannot buy groceries, reserve an airplane ticket, make a bank deposit using an ATM, or even make a long-distance telephone call without computers being used. In fact, some people believe that knowing how to use a computer is an essential skill to succeed in business or to function effectively in our society.

Keep in mind as you finish these ten lessons that this is only the beginning of an exiting discovery into the world of high technology. Throughout the lessons, you will be expected to keep a personal portfolio for your work samples as you learn to use the computer. For example, in this module you will prepare:

1. An inventory of all of the types of files on your computer.
2. A business letter created in a word processing program.
3. Internet searches to five different web sites.
4. A printed copy of an article found at a web site.
5. Your own e-mail account and address book.
6. Different examples of many other things you can do with a computer.

Lesson Titles:

- 1-1 Where IS Everything??
- 1-2 Getting Organized
- 1-3 Creating a Document
- 1-4 Working with Your Document
- 1-5 Previewing the 'Net
- 1-6 Saving and Editing from the Web
- 1-7 E-mail Mania
- 1-8 Sending Good E-mail Messages
- 1-9 Help Is Always There
- 1-10 Look -- There's More!

Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 1

LESSON 1-1: Where IS Everything?? *Approx. time: 1 class*

Lesson overview:
In this lesson students are introduced to the computer and explore the desktop using the mouse.

Students will demonstrate the ability to:
1. Use the mouse to point, click, double click, drag and scroll. (T/WIN)
2. Start programs. (T/WIN)
3. Open and close windows. (T/WIN)
4. Browse through files and locate specific files. (T/WIN)
5. Teach or mentor others. (F/TW, ES-7)
6. Learn from others, build on their expertise, and practice new skills. (F/SL)
7. Complete tasks in accordance with instructions. (ES-3, ES-4)

Prerequisites: None

Content required:
1) Identification of on/off procedures and computer names
2) Using the mouse
3) Exploring the desktop:
    a) Objects
    b) Taskbar and menus
    c) Use of windows

Resources:
Books on Windows 95/98
Videos available of Win 95/98
CDs for 95/98 Training

Materials checklist:
✓ Step-by-Step Handout (*JMOD1-1-1*) for each student

Equipment checklist:
✓ Computer for each student
✓ Computer display projector

Teaching strategy:

Part 1 – Preparatory Discussion

1. Explain that the purpose of this lesson is to begin to understand what is on the computer and how it works, using an operating system called Windows.

2. Depending on the computer lab environment, identify for the students the preferred method for turning on their computer station.
3. Name the computer components that the students will be using and point to each while giving a brief description. For example, in this lesson they are using the computer, monitor, and mouse.

Part 2 – Hands-On Computer Activities

4. Pair each student with a more experienced student whenever possible and distribute the Step-by-Step Handout (*JMOD1-1-1*) to all of the students and instruct them to begin the exercises.
5. Walk the students through Step 1. As students read the handout, demonstrate on the computer display the locations of the desktop, objects and taskbar. Encourage the mentors to offer additional explanations if their partners are confused.
6. Continue through Steps 2 & 3 and provide further explanation or examples for what objects can represent if required by the students.
7. Allow the students to continue the rest of the steps of the handout but monitor the progress of each team and offer assistance when necessary.

Part 3 – Class Discussion and Review

8. After every team has completed the exercises, conduct a group discussion to review the key concepts of the Windows Desktop and movement around it. Ask students to name the different computer components that they used and to answer questions from the information on the handout.

HOT Activities:

1. Assign students who are experienced Windows users the task of demonstrating additional features of the mouse, taskbar, and other basic controls that were not covered in the handout but might be useful or interesting to the students. Provide for a show-and-tell activity where these students can demonstrate the feature, describe it to the class, and then walk the class through doing it, using the computer display projector. If this equipment is not available, divide the students into small groups around a computer and have the mentors rotate throughout the groups, demonstrating their expertise.

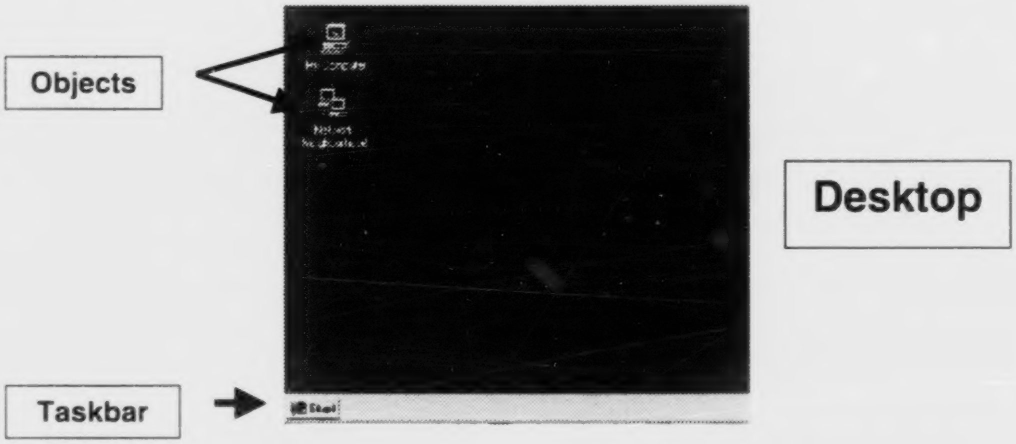
Assessment Methods:

- Observation by instructor of students working together to complete the exercises and of students participating in review discussion.
- Individual results on handout are evaluated by student and instructor.
- Assessment by instructor and students of what was learned from demonstrations of Windows features.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 1-1

1. Turn on your computer and wait for Windows Desktop to appear. Your screen should look something like this with even more objects on it.



The mouse controls a pointer on the screen that looks like a left-pointing arrow. There are four basic ways to use the mouse:

- Pointing – Directs the pointer at the item on the screen.
- Clicking – Pressing the left button one time.
- Click and drag – Pressing the left button and holding it down while you move the pointer. Release when you have reached the destination.
- Double click – Pressing the left button twice in succession.

The **Taskbar** is usually displayed at the bottom of the computer screen as shown in the picture, but it can be located at any other edge of the Desktop. There are three main parts to the Taskbar:

- Start Button – On the far left which opens the Start Menu.
- Tray – On the far right which tells you the status of the clock and other computer system components.
- Middle Section – Will contain buttons for the multiple applications that you can open at one time in Windows

2. Move the mouse pointer on top of the Start Button and then click the left mouse button. The Start Menu opens.
3. Move the mouse pointer outside the Start Menu and click the mouse. This closes the Start Menu.

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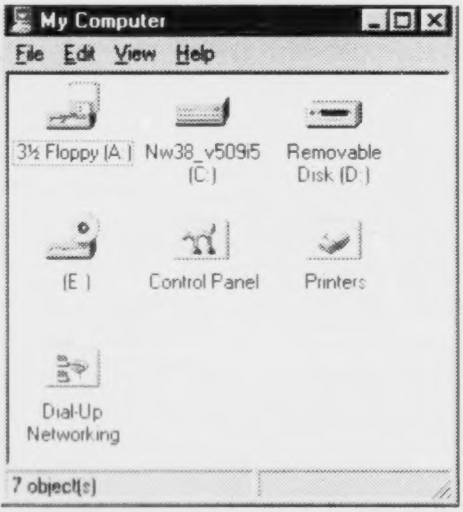
The small pictures on the Desktop are called **Icons**. Icons are better known as **Objects** and are used to access almost everything on the system.

Objects on the Desktop can represent:

- The computer or parts of the computer such as the floppy drive, hard drive, CD-ROM drive, etc.
- Applications – Programs to accomplish tasks with the computer
- Folders which contain files that are related by application, purpose, or type
- Documents containing data stored in the system

4. Double click on the object labeled My Computer on the Desktop. A window something like the picture below should pop up. Study the parts and their functions. Notice that there are seven more objects inside this window.



Title Bar – Shows the name of the window

Menu Bar – Contains the names of menus which make commands available in Windows 95

Control Buttons – Allow you to:

Minimize – Removes the window from the screen without closing it.

Maximize/Restore – Expand the window to cover the entire screen or return a maximized window back to its previous size.

Close – Removes the window from the screen after you are finished using it.

5. Click the middle Control Button to maximize the window. Click the Control Button again to restore the window to its original size.

6. Click the Minimize button on the left. Note how the window now shows up as a button in the Middle Section of the Taskbar. Click on the Taskbar button to open the window again.

7. Close the window using the last control button on the right.

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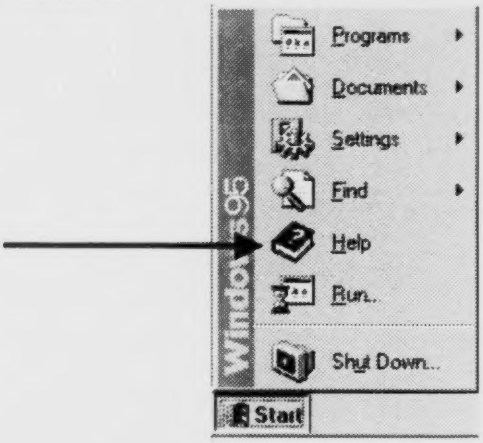
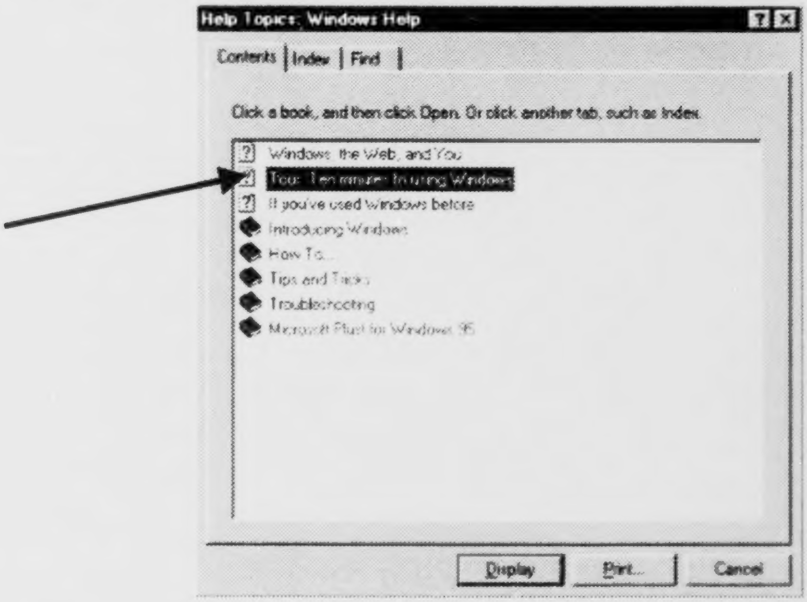
8. Click on the Start Button on the Taskbar and a menu of choices will pop up like in the picture below:


Windows95
Programs
Documents
Settings
Find
Help
Run...
Shut Down...
Start

9. Click on the Help menu option and another window will appear as shown. For the next part of the exercise, you will practice using your new skills in Windows by taking a tour.


Help Topics: Windows Help
Contents
Index
Find
Windows, the Web, and You
Tour: Ten minutes to using Windows
If you've used Windows before
Introducing Windows
How To...
Tips and Tricks
Troubleshooting
Microsoft Plus! for Windows 95
Display
Print...
Cancel

Click a book, and then click Open. Or click another tab, such as Index.

10. Double click on the line with Tour to start the program.

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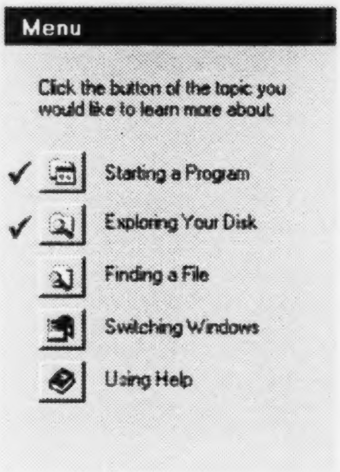
11. You will complete only the first two sections of the tour in this exercise. Click on Starting a Program and carefully follow the instructions on the screen. When finished with the section, continue to Exploring Your Disk and complete it. If you would like to go back and review either or both of the two sections, just click the section and replay it as many times as you like until you are comfortable with the process.



Click the button of the topic you would like to learn more about.

12. When finished with the two sections of the tour, continue to explore your computer's Desktop:

- Examine each Object on the Desktop and describe what it accesses.
- If a window with additional Objects is accessed, examine those Objects and describe what is accessed.
- Continue until you have a complete inventory of all of the Objects on your Desktop.

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Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 1

LESSON 1-2: Getting Organized *Approx. time: 1 class*

Lesson overview:
Students work in this lesson to understand completely file structure and the organization of files on the computer, so that they know where everything is located. The concept of saving a file on the hard disk is also explained.

Students will demonstrate the ability to:
1. Browse through files and locate specific files. (T/WIN)
2. Create and save a file. (T/PC)
3. Learn and practice new skills. (F/SL)
4. Complete tasks in accordance with instructions. (ES-4)

Prerequisites: Lesson 1-1

Content required:
1) Explanation of the file structure
    a) Folders and files
    b) Using Windows Explorer
2) Basics for file management
    a) Save
    b) Save as
    c) Copy

Resources:
Books on Windows 95/98
Videos available of Win 95/98
CDs for 9598 Training

Materials checklist:
✓ Step-by-Step Handout (*JMOD1-2-1*) for each student

Equipment checklist:
✓ Computer for each student
✓ Computer display projector

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Create a folder on each student computer called IT Practice. Create a file in WordPad called Welcome to be placed in the folder. This file could contain a

simple greeting to the students from the Job Corps staff or more information about their computer class.

Part 2 – Preparatory Discussion

1. Review the concepts covered in Lesson 1-1 and ask the students to describe in their own words what they learned from the previous lesson.
2. As the discussion continues, begin a list on the board of computers terms to which the students have been introduced. Have students make their own copy of the list. Continue to review by having different students explain in their own words other computer terminology such as: objects, icons, folders, taskbar, minimize, maximize, etc.
3. Focus on the results of their findings from Lesson 1 in Step 12 of the handout (*JMOD1-1-1*). Ask the students to describe or even diagram on the board what the contents of their computer looks like. Push to see it anyone comes close to describing the branching concept that will be central in this lesson.
4. Explain that the purpose of this lesson is to further understand how everything is organized on the computer using a program called Windows Explorer and to save a file of their own on the computer using the WordPad program.

Part 3 – Hands-On Computer Activity

5. Distribute the handout (*JMOD1-2-1*) and allow time for the students to read the information at the beginning of the activity.
6. Introduce the concept of the file structure and relate it to the students' findings in the previous lesson.
7. Have students complete Steps 1-3 and study the Exploring window that appears on their computer.
8. Using the Windows Explorer screen, describe and demonstrate;
    - Additional features on the window. For example,
        Scroll bars
        Up One Level Button
    - The hierarchy of folders and files
    - What the + and – signs indicate: the expand and collapse features

    Instruct the students to watch the demonstrations and repeat the steps on their computers each time.
9. Provide time for students to complete Steps 4 - 12 on their own. Monitor student progress and offer assistance if needed.

Part 4 – Classroom Discussion and Demonstration

10. Before students continue to Step 13, explain in depth the distinction between Save, Save As, and Copy – Each of these commands creates a file, but explain when a second version of the file is created as opposed to when the new version merely takes the place of the old version. Demonstrate for the students numerous examples before allowing them to continue the hands-on computer activity

HOT Activities:

1. Solicit ideas for safely and effectively creating, saving, and copying files and have students practice, practice, practice. As new files are created, list these on the board so students will be able to keep track of them.

Assessment Methods:

- Observation by instructor of proper file management techniques by students.
- Individual results on handout are evaluated by students and instructor.
- Instructor checks computer files on each system and verifies completion and accuracy in following directions for each student.
- Evaluation by instructor of student participation in class discussions.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 1-2

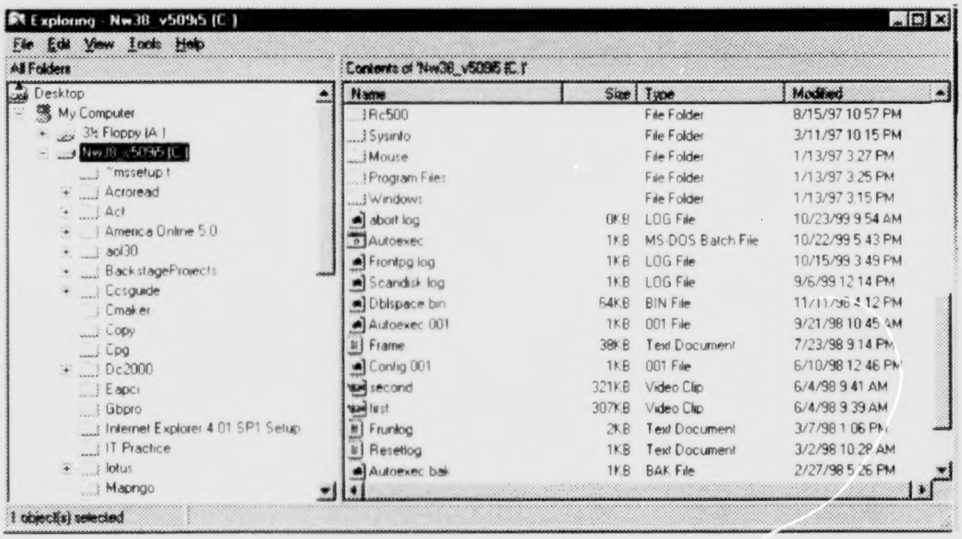
If you want to find information in your computer, you need to know how computers store information. All information on a computer is stored in *files* – individually named sets of information. When you enter information, like a letter, into the computer using a program, you store this information in a *document file* (usually just called a *document*). The documents you create might include letters, reports, tables, charts, and lists.

As you work, you will probably create a lot of documents. You can organize these documents in *folders*. Folders are similar to file folders in a filing cabinet in the center's office. Each folder can hold one or more documents. Your folders are stored on the *hard disk*, which is like a huge filing cabinet inside your computer. Your folders and documents can also be stored on a *floppy disk*. A floppy disk is like a small, portable filing cabinet for your computer.

Using Windows *Explorer*, you can search through and get into all the files, folders and disk drives of your computer.

1. Click Start.
2. On the Start menu, point to Programs.
3. On the Programs menu, click Windows Explorer.

   Windows Explorer is divided into two windows. The left window lists the computers, disk drives, and folders on your system. The right window lists the contents of what you select in the left window.



Exploring - Nw38_v5095 (C:)
File Edit View Tools Help
All Folders
Desktop
My Computer
3½ Floppy (A:)
Nw38_v5095 (C:)
~mssetup.t
Acroread
Act
America Online 5.0
aol30
BackstageProjects
Ccsguide
Cmaker
Copy
Cpg
Dc2000
Eapci
Gbpro
Internet Explorer 4.01 SP1 Setup
IT Practice
lotus
Mapngo
Contents of 'Nw38_v5095 (C:)'
1 object(s) selected

Name	Size	Type	Modified
Rc500		File Folder	8/15/97 10:57 PM
Sysinfo		File Folder	3/11/97 10:15 PM
Mouse		File Folder	1/13/97 3:27 PM
Program Files		File Folder	1/13/97 3:25 PM
Windows		File Folder	1/13/97 3:15 PM
abort.log	0KB	LOG File	10/23/99 9:54 AM
Autoexec	1KB	MS-DOS Batch File	10/22/99 5:43 PM
Frontpg.log	1KB	LOG File	10/15/99 3:49 PM
Scandisk.log	1KB	LOG File	9/6/99 12:14 PM
Dblspace.bin	64KB	BIN File	11/11/96 4:12 PM
Autoexec.001	1KB	001 File	9/21/98 10:45 AM
Frame	38KB	Text Document	7/23/98 9:14 PM
Config.001	1KB	001 File	6/10/98 12:46 PM
second	321KB	Video Clip	6/4/98 9:41 AM
first	307KB	Video Clip	6/4/98 9:39 AM
Frunlog	2KB	Text Document	3/7/98 1:06 PM
Resetlog	1KB	Text Document	3/2/98 10:28 AM
Autoexec.bak	1KB	BAK File	2/27/98 5:26 PM

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4. In the left window of Windows Explorer, titled All Folders, click (C:).

   The right window, titled Contents Of '(C:)', lists all the folders and files stored on your hard disk.

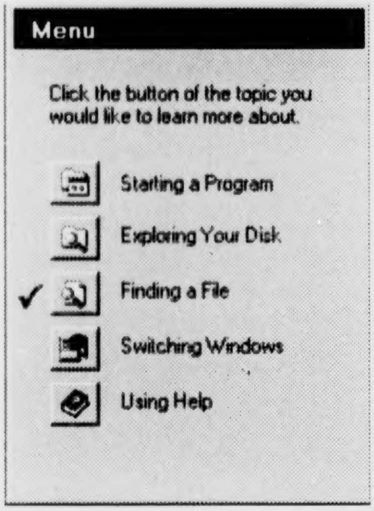
5. In the right window, find the IT Practice folder and double-click it.

6. In the right window, which shows the contents of the IT Practice folder, find the document called Welcome and double-click it.

7. After reading the information in the Welcome file, click the close button in the upper-right corner of the Exploring window to finish.

Here is another way to find a file on your computer:

8. Click Start.
9. On the Start menu, point to Programs.
10. On the Programs menu, point to Accessories and click Tips and Tour.



Click the button of the topic you would like to learn more about.

11. Complete the third section of the tour as shown in the picture. Answer the following question from the section below:

Finding a File – What was discussed at the meeting?

Answer: ____

12. Exit the tour and continue to the next page.

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13. Click Start.
14. On the Start menu, point to Programs.
15. On the Programs menu, point to Accessories and click WordPad.

16. Type the following message in the window:

    This is my very first file to be saved on the computer.

Saving a document creates a permanent file on your hard disk or floppy disk so that you can open the document again, even after you have turned off the computer and restarted it. When you save your document, you give it a name that helps you identify the contents of the document. In the following steps, you will save your file on the hard disk of the computer in the IT Practice folder.

17. Click the Save button on the toolbar at the top of the WordPad window. The button has the picture of a floppy disk on it as shown below.

18. Under the Save In list box, double-click My Computer and then double-click the hard disk (C:).

19. Double-click the IT Practice folder. You may need to use the scroll bar to find the folder.

20. Double-click the File Name text box, type **MY FILE**, and the click the Save button.

21. Click the Close box to close the WordPad window and end the activity.

Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 1

LESSON 1-3: Creating a Document *Approx. time: 1 class*

Lesson overview:
In this lesson, students will be introduced to the features of a word processing program and prepare a letter.

Remember: Depending upon which word processor is installed on your classroom computers, some of the terminology below may be different.

Students will demonstrate the ability to:
1. Use navigational keys and functions to create a new document. (T/WP)
2. Correctly format a letter. (F/D&BC)
3. Clarify when further information is required. (ES-6)
4. Share information and explain procedures to others. (F/D&BC, ES-7)

Prerequisites: Basic computer functions and Windows

Content required:
1) Understanding the word processing program:
2) Create a new document

Resources:
Word processor manual

Materials checklist:
- ✓ Step-by-Step Handout *(JMOD1-3-1)* which may need to be customized by instructor depending on the Word Processing program used
- ✓ Transparency of screen layout of word processing program
- ✓ Transparency of the format of a sample business letter

Equipment checklist:
- ✓ Computer installed with a word processing program
- ✓ Printer with paper
- ✓ Overhead projector and/or computer display projector

Teaching strategy:

Part 1 – Introductory Discussion
1. Review the accomplishments of the students in Lesson 2 and address any areas that need additional attention or explanation before continuing.
2. Explain to the students that during today's lesson they will learn more about how to create a document in a word processing program.

Part 2 – Individual Writing Assignment

3. Have students compose a handwritten letter requesting information about available jobs at a company where they might like to work.
4. Provide guidelines for the content by displaying the transparency of the format for a sample business letter.

Part 3 - Hands-On Computer Activity

5. Distribute the Step-By-Step handout (*JMOD1-3-1*) and team students if possible, so that an already experienced student is working with one with no experience.
6. Demonstrate the features of the word processing program listed on the handout in Steps 2 & 3. Allow time students to practice demonstrating to each other these features.
7. Have the students read about the features of Word Wrap, Scrolling, and Moving the Cursor.
8. Demonstrate each of the features to the students before they continue with Step 4. Emphasize that these are the main differences between typing on a typewriter and typing on a word processor.
9. Monitor the progress of the teams to make sure that everyone completes the typing of their letter. Offer assistance when required.

HOT Activities:

1. Conduct a discussion comparing other differences between using a word processing program and using a typewriter. Ask students to analyze the techniques that they used to type their letters in the word processing program and how these would be different if they had used a typewriter. Record the students' comments on the board. Conclude the discussion by having students consider the efficiency in time and resources of these differences.

Assessment methods:

- Instructor observes students working in pairs on the computer (peer teaching and demonstrating).
- Evaluation by instructor of student's ability to complete the composition and typing of his or her letter.
- Contribution of examples to the discussion of how the typewriter is different from a word processor.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 1-3

1. Start your computer and select the word processing program.

   A *word processing program* allows you to use the computer to produce or modify documents that consist primarily of words or text. Millions of people use word processing programs every day to create letters, memos, and reports because they can easily change what has been done. For example, you can add, delete, or rearrange words, sentences or entire paragraphs. You can print your document as many times as you like with each copy looking as good as the first.

   Creating a word processing document requires entering text using the *keyboard* and the mouse.

2. Locate the following as you look at your word processing program:
   - ➢ Title Bar
   - ➢ Menu Bar
   - ➢ Toolbars
   - ➢ Rulers
   - ➢ Document Marker
   - ➢ View Buttons
   - ➢ Status Bar

3. Identify basic commands which are available:
   - ➢ Locate each of the Toolbar Buttons and determine their functions.
   - ➢ Locate the commands from the Menu Bar.

There are three key features used during the creating of a word processing document:

> **Word Wrap** – provides an automatic line return when the text reaches the right-hand margin. Unlike a typewriter, you can continue typing and do not have to press the Return or Line Feed key.
>
> **Scrolling** – moves the document so you can view any part of it. Using the mouse, the document can be moved or scrolled up or down behind the screen window. The screen can also be scrolled left or right for wide documents.
>
> **Moving the Cursor** – The cursor is a symbol, such as the left-pointing arrow or a vertical bar, that indicates where on the screen the next character will appear. The cursor is moved by using the mouse or by using the cursor control keys on the keyboard.

4. Practice using the mouse to:
   - Point
   - Click
   - Scroll

5. Type the text for the letter that you composed.

6. If you need to correct any typing errors, position the cursor at the error. Use the *Insert* key to add new characters or spaces, the *Delete* key to remove characters or spaces to the right, or the *Backspace* key to remove characters or spaces to the left.

7. When you have finished typing your letter, save the document using the file name **Letter 1** in your **IT Practice** folder.

Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 1

LESSON 1-4: Working with Your Document *Approx. time: 1 class*

Lesson overview:
In this lesson, students will print a draft of their letter to be proofread by their partner. After the editing process has been completed, students will print and save a final version of their letter.

Students will demonstrate the ability to:
1. Locate and open an existing document. (T/WP)
2. Print, save and close a document. (T/WP)
3. Listen effectively. (F/D&BC, ES-5)
4. Work with a team to peer edit. (F/D&BC, ES-10)
5. Clarify when further information is required. (ES-6)
6. Share information and explain procedures to others. (F/TW, ES-7)

Prerequisites: Basic computer functions and Windows

Content required:
1) Working with an existing document
    a) Locate and open
2) Save and print functions

Resources:
Word processor manual
Business manual or proofreading guide

Materials checklist:
- ✓ Step-by-Step Handout *(JMOD1-4-1)* which may need to be customized by instructor depending on the Word Processing program used
- ✓ Student files named Letter 1
- ✓ Transparency of the format of a sample business letter

Equipment checklist:
- ✓ Computer installed with a word processing program
- ✓ Printer with paper
- ✓ Overhead projector and/or computer display projector

Teaching strategy:

Part 1 – Introductory Discussion
1. Confirm that everyone has a typed version of their handwritten letter from Lesson 3 saved on the computer under the file name Letter 1.

2. Explain to the students that during today's lesson they will proof the letter they have composed and print a final copy to be turned in to the instructor.
3. Ask students to choose a partner to work with during the next activities.

Part 2 - Hands-On Computer Activity

4. Distribute the Step-By-Step handout (*JMOD1-4-1*) to every student.
5. Review the types of proofreading functions offered in the handout. Give students examples of each kind of error and ask students to identify other examples.
6. Display the transparency of the business letter for them to use when checking format, spacing, and margins of the letter they are proofing.
7. Monitor the progress of the pairs to make sure that everyone completes the proofing of their partner's letter. Offer assistance when required.

HOT Activities:

1. Have students read their letters to the class. Ask the class members to listen carefully to the requests that are made in each letter and to rate them based on effectiveness. From their comments, develop a list of guidelines for good writing that the students could choose whenever preparing a similar business letter.
2. Ask students to write a second letter and produce a final copy without the proofreading help of a partner. Suggest possible topics such as a request for a job application from another company, a request for a free evaluation copy of a software program from a manufacturer, or a request for sponsorship of a Job Corps sports event.

Assessment methods:

- Instructor observes students working in pairs on the computer (peer teaching and demonstrating).
- Evaluation by instructor of student's ability to complete the proofreading assignment and typing of his or her letter.
- Instructor observes contribution by the students to the discussions about ways of improving their letters.
- Evaluation by instructor of second letter produced by the students that incorporate guidelines for good writing.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 1-4

1. Start your computer and select the word processing program.
2. Open the file **Letter 1** located in the **IT Practice** folder.
3. Print one copy of your letter using the Toolbar.

🖨

4. Exchange copies of your letter with your partner for proofreading. The purpose of proofreading is to ensure that the letter contains no typing errors or confusing sentences.
5. Use the following checklist to guide you during the proofing of your partner's letter:
    - Read the entire document carefully.
    - Check for proper grammar.
    - Check for correct punctuation.
    - Check for correct spelling.
    - Check for correct capitalization.
    - Check for proper spacing and margins.
    - Check sentences to see that they are complete.
6. If you find an error or change that is required in the letter you are proofing, circle and write an explanation for your partner.

7. After you have completed proofreading the letter, return it to your partner.

8. Complete the changes that are required to correct any errors or to improve any confusing language in your letter.

   Remember: If you need to correct any typing errors, position the cursor at the error. Use the *Insert* key to add new characters or spaces, the *Delete* key to remove characters or spaces to the right, or the *Backspace* key to remove characters or spaces to the left.

9. Save the revised letter as **Letter 2** in the **IT Practice** folder using Save As on the File Menu.

10. Print one copy of the new letter (Letter 2) to turn in along with the copy of the proofed letter (Letter 1).

1. Close the document and the word processing program.

LESSON 1-5: Previewing the 'Net *Approx. time: 1 class*

Lesson overview:
In this lesson the Internet is explained and students have an opportunity to explore different web sites.

Students will demonstrate the ability to:
1. Use an Internet browser to start and move between Web pages. (T/INT)
2. Conduct simple searches on the Internet. (T/INT)
3. Follow directions and effectively apply new skills. (ES-4, F/SL)

Prerequisites: Basic computer functions and Windows

Content required:
1) Description of basic Internet functions
2) Examples of personal and business use of the Internet

Resources:
Any Internet browser
Numerous web sites appropriate for student viewing

Materials checklist:
- ✓ Handout of Activity Sheet *(JMOD1-5-1)* for each student

Equipment checklist:
- ✓ Computer projection system

Teaching strategy:

Part 1 – Introductory Classroom Discussion
1. Introduce the lesson and ask the students to describe what they think the Internet is. Record their ideas on the board. For example: "the Internet is like a huge library."
2. Ask the students what they think a browser is and to give an example of any they might have used. Again, record their ideas on the board. Using the library example, "a browser lets you into the library and can direct your time there." Internet Explorer and Netscape are two of the most popular browsers people use.
3. Explain that each place you go to on the "net" is a site; there are millions of them! But to accomplish finding the sites, a Search Engine is used like a card catalog. It will enable you to find many matches for the topic you type into the little box. You get a list of sites with little explanation of what is really there, so

you have to go there to see for yourself.

4. Discuss the applications of the Internet in business and for personal use. For example, ask if any students have purchased items over the Internet. Probe the students for other ways that the Internet has changed the way we do business. Record these ideas on the board.

Part 2 - Hands-On Computer Activity

1. Distribute the Activity Sheet (*JMOD1-5-1*) to all of the students.
2. Before they begin the activities, ask the students what they would like to find on the Internet. Guide them through the development of five (5) categories that are of interest to the class and would provide search opportunities that are acceptable. Try to develop major categories which include subsets. For example: Planets/Mars
   Dogs/Greyhounds
3. Demonstrate how to access the web using the browser and a simple search for the students, similar to what they will be doing on the Activity Sheet.
4. Have the students follow along during the demonstration on their own computers and then begin their practice with the Activity sheets.
5. As the students complete the Activity sheets, monitor closely their progress and the sites which they are accessing.

HOT Activities:

1. After all of the students have finished the Activity Sheet, gather the class together to conduct a round table discussion about their "web travels". Go around the group asking each student to describe one site (why it was chosen, what they liked/didn't like about it). Repeat four more times until all of the sites visited by the students have been described. If possible, rank the sites and develop a top-ten list.

Assessment methods:

- Instructor observation of each student's progress and capability to perform the basic Internet functions.
- Peer assessment of web sites.
- Assessment and feedback provided by instructor of completed Activity sheet.

Instructor evaluation and comments for improvement:

Activity Sheet
Lesson 1-5

1. Open the browser, go to **Search** (or **Net Search**), and then to *AltaVista* or another popular search engine.

2. Practice:
   - Do a simple search on the term music:
     - List the number of 'matches' found: ____________
     - Select a site and explore it.
     - Print out **one page only** from the site.
   - Use the **Back** button, maybe several times, and return to the home page of the search engine.
   - Do another search on musicals:
     - List the number of 'matches' found: ____________
     - Why are there fewer 'matches'?

       ____

3. Repeat the above steps for searching the Internet for each of the five topics chosen by the class and record your results below:

   Search #1
   - Do a simple search on ____________:
     - List the number of 'matches' found: ____________
     - Select a site and explore it.
     - Print out **one page only** from the site.
   - Use the **Back** button, maybe several times, and return to the home page of the search engine.
   - Do another search on ____________:
     - List the number of 'matches' found: ____________
     - Why are there fewer 'matches'?

     ____

   Search #2
   - Do a simple search on ____________:
     - List the number of 'matches' found: ____________
     - Select a site and explore it.
     - Print out **one page only** from the site.
   - Use the **Back** button, maybe several times, and return to the home page of the search engine.
   - Do another search on ____________:
     - List the number of 'matches' found: ____________
     - Why are there fewer 'matches'?

     ____

Search #3
- Do a simple search on ___________:
  - List the number of 'matches' found: ___________
  - Select a site and explore it.
  - Print out **one page only** from the site.
- Use the **Back** button, maybe several times, and return to the home page of the search engine.
- Do another search on ___________:
  - List the number of 'matches' found: ___________
  - Why are there fewer 'matches'?

____

Search #4
- Do a simple search on ___________:
  - List the number of 'matches' found: ___________
  - Select a site and explore it.
  - Print out **one page only** from the site.
- Use the **Back** button, maybe several times, and return to the home page of the search engine.
- Do another search on ___________:
  - List the number of 'matches' found: ___________
  - Why are there fewer 'matches'?

____

Search #5
- Do a simple search on ___________:
  - List the number of 'matches' found: ___________
  - Select a site and explore it.
  - Print out **one page only** from the site.
- Use the **Back** button, maybe several times, and return to the home page of the search engine.
- Do another search on ___________:
  - List the number of 'matches' found: ___________
  - Why are there fewer 'matches'?

____

4. Quit and exit the program.

5. Turn in the completed handout along with the printouts of the sites you explored at the end of the class.

Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 1

LESSON 1-6: Saving and Editing from the Web *Approx. time: 1 class*

Lesson overview:
In this lesson, students will find an article on the Web and save it in their word processor after editing.

Students will demonstrate the ability to:
1. Use an Internet browser to edit text and to save to the hard drive. (T/INT)
2. Save images from a Web page in a word processing document. (T/INT)
3. Work effectively with a partner. (F/TW, ES-10)
4. Follow directions and effectively apply new skills. (F/SL, ES- 4)
5. Access information from computers. (ES-13)

Prerequisites: Lesson 1-5

Content required:
1) How to copy text and paste into a word processor.
2) How to copy images and paste into a word processor

Resources:
The Internet for Dummies, John Levine
Reference Manuals for the browser that is being used.
Web sites for a variety of different industries that may be of interest to the class

Materials checklist:
✓ Step-by-Step handout (*JMOD1-6-1*) which may need to be customized

Equipment checklist:
✓ Computer with Internet access and browser
✓ Printer with paper
✓ Computer overhead projector

Teaching strategy:

Part 1 – Introductory Discussion
1. Review the results of the searches in Lesson 1-5.
2. Explain the purpose of the today's lesson and ask the students to identify ways which they think they might be able to copy and paste from the Web into the word processing program.
3. List the steps on the board as they come up with the correct ones for copying and pasting from one application to the other.

Part 2 – Hands-On Computer Activity

4. Distribute the Step-by-Step handout (*JMOD1-6-1*). Allow students to work in pairs but each student should find their own article.
5. Review the information about Home pages and URLs as the students read their handouts.
6. Help the class develop or provide ahead of time a possible list of web sites that they may visit to get an article of interest. Suggest that they look at company web sites for jobs or job openings within their community. Allow time for students to search for sites and list these on the board also.
7. Instruct the students to fill in their choices of sites under Step 3 on the handout.
8. Monitor the progress of the students and offer help when needed.

HOT Activities:

1. Conduct a round-able discussion on the articles and images found on the Internet. Ask the students to display their documents with the articles and the images for the rest of the class to see. Have students with popular articles or images share those URLs with their classmates.
2. Instruct students to repeat the steps of the handout individually using a different web site. Encourage them to look at one of the other popular web sites identified during the class discussion

Assessment methods:

- Observation by instructor of students working together in pairs.
- Assessment by instructor of printouts turned in by all students.
- Observation by instructor of classroom participation in round-table discussion.
- Evaluation by the instructor of the student's ability to repeat and successfully complete the step-by-step assignment individually.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 1-6

1. Open your word processing program and create a new file.
2. Save the new file as **Web Info** in the **IT Practice** folder and minimize.

Every web site consists of a collection of related web pages. Most web sites have a starting point called a **home page**. The home page is like a table of contents for the site and generally provides information about the site's purpose and content.

Every web page at a web site has a unique address called a **URL**. URL stands for **Uniform Resource Locator**. The four parts of a URL are explained below:

A	**B**	**C**	**D**
http://	www.microsoft.com	/product	/index.htm

A - Protocol: rules used to transfer data
B - Domain name: identifies the computer that stores the web pages
C - Directory path: identifies the folder where the web page is stored
D - Document name: name of web page

3. Open the internet browser and access one of the sites listed below by typing the URL:

   - ______________________________
   - ______________________________

4. Find an article which is related to one of your interests.

5. Select the information you want to capture by clicking the mouse at the starting location, dragging to highlight the desired text, and choose **Edit**, and **Copy** from the top Menu Bar of the browser.

6. Maximize the document file in the word processor and choose **Edit** and **Paste** from its top Menu Bar.

7. Edit the article by re-phrasing or adding something to the content article.

8. Minimize the document and return to the web site article.

9. Find an image or picture that you would also like to include with your article.

10. Click and hold the mouse button down on the image. A pop-up menu will appear; let mouse up on "Copy this image". The image is copied to **Clipboard** in the word processor.

11. Return to the document file (maximize it again) and place mouse where you want the image.

12. Choose **Edit** and **Paste**.

13. Save the changes to your document and print a copy to turn in.

LESSON 1-7: E-mail Mania *Approx. time: 1 class*

Lesson overview:

One of the most popular features of the computer today is the ability to have E-mail. Students send, receive and reply to e-mail messages in this lesson.

Students will demonstrate the ability to:

1. Explain the purpose and basic features of e-mail systems. (T/E-M)
2. Send, receive, reply, forward, save, and delete messages. (T/E-M)
3. Listen effectively and follow directions. (ES-4, ES-5)
4. Communicate clearly and concisely in a business environment. (F/D&BC)

Prerequisites: Basic computer functions and Windows

Content required:

1) Purpose of e-mail
2) Basic commands and uses

Resources:

Microsoft Outlook '97 Field Guide and Outlook '97 At A Glance, both by
S.L.Nelson, Microsoft Press
http://www.microsoft.com/products/prodref/608_ov.htm

Materials checklist:

- ✓ Transparency and/or handouts of Activity Sheet (*JMOD1-7-1*)
- ✓ E-mail account software for student use
- ✓ An instructor e-mail address available for receiving e-mails from the class

Equipment checklist:

- ✓ Computers with Internet connection
- ✓ Overhead projector

Teaching strategy:

Part 1 - Introductory Discussion

1. Introduce the topic of e-mail with a short discussion focused around the purpose of e-mail: For example:
   - What does the term e-mail mean? (electronic mail)
   - What is its purpose? (Quick, effective, focused communication)
   - How does it work? (A computer with an e-mail software program, a browser and an Internet connection is able to communicate with any other computer that has e-mail capacity, a browser, and an Internet connection.)

2. Demonstrate each of the basic functions of e-mail use for the students using the computer projector and have them watch as the process is explained. Emphasize that all e-mail systems have common functions and give examples such as send, receive, reply, address books, etc.

Part 2 – Hands-On Computer Activity

3. Have students open the e-mail software program and set up an e-mail account for use in the classroom. (There are several free e-mail services such as HotMail and Juno.) Help them determine an acceptable account name along with their personal password.
4. List the account name for each student on the board and show how these are entered into the instructor's account address book.
5. Compose a simple, business-like e-mail message and demonstrate sending the same message to every student in the class.
6. Distribute the Activity Sheet (*JMOD1-7-1*) to all of the students. Have students begin the activities by looking for their message.
7. Instruct students to reply to their message with another simple, but business-appropriate message.
8. Monitor carefully the progress of the students as they practice each e-mail function.

HOT Activities:

1. Have students pretend they have daily access to e-mail capability. Assign them to develop a list of five to ten ways they could utilize this in their daily lives: for fun, friendship, class and/or family purposes. Have students share their lists with the class as part of discussion.

Assessment methods:

- An activity identical (with a different e-mail reply-to-person) to the above can be designed, having each student work by him/her self to demonstrate mastery.
- Evaluation and feedback by the instructor of the students' results on the Activity Sheet.
- A follow-up piece to this assessment could include a short exercise that asks students to explain in 1-2 sentences, in their own words, how to:
  - Locate e-mail software programs on the computer
  - Open e-mail software
  - Open, reply to, forward, save and delete messages

Instructor evaluation and comments for improvement:

Activity Sheet
Lesson 1-7

1. Retrieve your e-mail message and print a copy.

2. Type a response to your e-mail and print a copy.

3. Send your Reply.

4. Enter the e-mail accounts for these people in your address book:

    - Your Instructor
    - The student on your right
    - The student on your left

5. Create a new e-mail message and send to the student on your right.

6. When you receive another e-mail message, forward the message to the student on your right after you have finished reading it.

7. Print the message received from the student on your right and then delete it.

8. Repeat Step #5, but this time send the e-mail message to the student on your left.

9. E-mail your instructor with a message saying that you are finished with the exercises.

10. Turn in all of the copies of your printed e-mail messages to the instructor.

Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 1

LESSON 1-8: Sending Good E-mail Messages *Approx. time: 1 class*

Lesson overview:
Students will write, send, and print concise e-mail messages within established guidelines in this lesson.

Students will demonstrate the ability to:
1. Compose e-mail according to organization's guidelines. (T/EM)
2. Access and use information from manuals and computers. (ES-13)
3. Enter addresses and print messages. (T/EM)
4. Use appropriate language, style, and format for audience. (F/D&BC)

Prerequisites: Lesson 1-7

Content required:
1) Guidelines for e-mail use
2) Use of address book
3) Use of the print button or select **Edit**, then print.

Resources:
Web sites for industries in which the students are interested. For example, many trade organizations have a web site for members and potential members as well as specific corporations maintain web sites to lure potential employees.

Materials checklist:
- ✓ Example of e-mail policy guidelines for center, if available
- ✓ E-mail Assignment: Assessment Checklist (*JMOD1-8-1*) for each student

Equipment checklist:
- ✓ Computer with Internet and e-mail access

Teaching strategy:

Part 1 – Introductory Discussion

1. Introduce the lesson with a discussion about guidelines for good e-mail. Use examples from the center's e-mail policy if available. Ask students to add to these examples or provide a list, such as:
   - Don't send jokes.
   - Only include relevant return text.
   - Check your addresses to verify the message is going to the right person.
   - Check your spelling.
   - Eliminate cute sayings.
   - Stop when it's over – act like it costs money to send a message.

2. Explain to the students that they are going to compose an e-mail message similar to the letter that they wrote in Lesson 3 & 4. However, this time they will send the content electronically.

Part 2 - Hands-On Computer Activity

3. Ask students use the Internet to find a web site for a company that listed job information and note the webmaster's e-mail address.
4. Instruct students to open the e-mail software and under "Compose" select a new message.
5. Distribute the Assessment Checklist (*JMOD1-8-1*) to the students for them to review. Discuss the categories on the checklist and the style of their message: Tailoring the format to suit the intended audience, be it business-like, informal, or "finding-a-job-formal"! Conclude the discussion by having them compare how their e-mail message will differ from the formal letter of request that they prepared earlier.
6. Ask students to write a message to the webmaster of the site that they found. Remind students to introduce themselves during the message and to keep in mind the guidelines for good e-mail.
7. Request that students print out their e-mail message and proof before sending. Once the message has been edited, have the students send and print a copy to be turned in along with their Assessment Checklist.

HOT Activities:

1. Assign students the task of completing their address book with the names of the rest of the students on their own.
2. Have students make an electronic edition of a flyer and send to the entire class. Encourage them to cover a topic in which the students would be interested, such as upcoming social or sports events on campus.

Assessment methods:

Use the E-Mail Assignment Handout (*JMOD1-8-1*) to grade the printed message for:

- Conciseness
- Correct grammar and complete, intelligent, interesting sentences
- Spelling accuracy
- Completeness of message

Instructor evaluation and comments for improvement:

E-MAIL ASSIGNMENT:
ASSESSMENT CHECKLIST

Student:______________________

1.	Correct e-mail address and set-up of document to be created:		10pts
2.	Sentences: Short, simple, easy to understand, and concise:		15pts
3.	Designation and use of correct priority level		5pts
4.	Correct grammar, sentence structure and spelling		20pts
5.	Content:	Clear message	10pts
		2-3 well-constructed paragraphs	10pts
		Humor or interest-producing thoughts	10pts
		Appropriate tone and language for business	10pts
		Courteous and engaging style	10pts
		Total	100pts

LESSON 1-9: Help Is Always There *Approx. time: 1 class*

Lesson overview:
Students practice using the Help features to determine the kinds of information that are available on-line for their use instead of computer manuals.

Students will demonstrate the ability to:
1. Use Help to learn about specific procedures. (T/WIN)
2. Ask for clarification when further information is needed. (ES-6)
3. Create folders and organize files on disks and in folders. (T/WIN)
4. Follow instructions to complete assignment. (ES-4)
5. Copy files to a floppy disk. (T/PC, ES-13)
6. Share information and explain procedures to another person. (ES-7)

Prerequisites: Lessons 1-1, 1-2, 1-3, and 1-4

Content required:
1) Introduction to Help options
2) Using Help to create folders
3) Using Help to move and copy files

Resources:
Online Help in Windows 95/98

Materials checklist:
- ✓ Step-by-Step Handout (*JMOD1-9-1*) for each student
- ✓ Student files including **Letter 1** and **Letter 2** produced in Lessons 3 and 4
- ✓ Floppy disk for each student

Equipment checklist:
- ✓ Computer for each student
- ✓ Computer display projector

Teaching strategy:
Part 1 – Review Discussion
1. Begin the lesson by reviewing important concepts covered, such as file structure, folders, icons and objects, etc. Ask different students to contribute explanations in their own words.
2. Explain to the students that this lesson will show them how to figure out functions in Windows using of Help along with giving them more practice organizing the files on their computer.

Part 2 – Hands-on Computer Activities

3. Distribute the Step-by-Step handout (*JMOD1-9-1*) to all of the students. Before they begin the exercises, have them read through the handout and ask questions about any of the tasks. Be sure that they understand the difference between moving and copying files.
4. Once the students start the exercises, monitor their progress closely. Offer assistance when necessary.

HOT Activities:

1. Upon completion of the handout, conduct a group discussion to identify the steps needed to accomplish the copying of files to a floppy disk. As students identify steps, record these on the board. Ask students to compare these steps to the ones that they used. Probe the students to find if other methods were used. Conclude by discussing the pros and cons of different methods for copying files (i.e. using Windows Explorer vs. file menu).
2. Have students continue to organize their computer system by creating additional folders to contain files for future lessons or center activities or by moving more files to a better folder.

Assessment Methods:

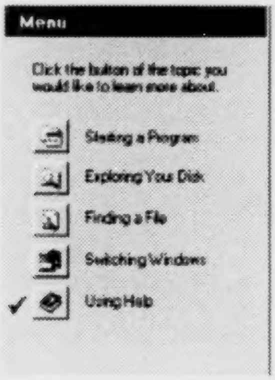
- Observation by instructor of students completing the handout and participating in the group discussion.
- Instructor assessment for accuracy and completeness of procedure prepared by students to copy files.
- Instructor verification of students' successfully completing the organization of their computer files.

Instructor evaluation and comments for improvement:

JMOD1-9-1

STEP-BY-STEP HANDOUT
Lesson 1-9

1. Click the Start Button on the Taskbar.
2. On the Start menu, point to Programs.
3. On the Programs menu, point to Accessories and click on Tips and Tour.


Click the button of the topic you would like to learn more about.
Menu
Starting a Program
Exploring Your Disk
Finding a File
Switching Windows
✓ Using Help

4. Complete the last section of the tour titled "Using Help" as shown in the picture.

5. Using the Help index, find the information for creating a new folder.
6. Print out the display with the information.
7. Follow the directions to create a new folder using your first initial and last name to label the folder.
8. Within your folder, create another folder labeled **JOB INFO**.

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9. Using the Help index, find the two ways that you can move files (or folders).
10. Print out the displays for each of the methods for moving files.
11. Practice each method as you move all of your files from the **IT Practice** folder to the folder with your name on it.
12. Move the files **Letter 1** and **Letter 2** to the **JOB INFO** folder.

13. Copy all of the documents in the two new folders to one floppy disk. (Be sure to label the floppy disk with the contents.)
14. List below each step used to accomplish the copy procedure:

LESSON 1-10: Look -- There's More! *Approx. time: 1 class*

Lesson overview:

Today's computers are capable of doing all kinds of interesting things. Students work in this lesson with some of the basic features in the Windows Accessories category to produce a simple document, to add a short list of numbers, and to create an original drawing. Additional demonstrations of other capabilities of the computer (such as playing sounds or music) are also included.

Students will demonstrate the ability to:

1. Use desktop accessories. (T/WIN)
2. Follow directions required to complete multiple tasks. (ES-4, ES-15)
3. Take initiative to practice new skills. (F/SL, ES-8)

Prerequisites: Lessons 1-1, 1-2, and 1-8

Content required:

1) Uses of Accessories:
    a) WordPad
    b) Calculator
    c) Paint
2) Preview of multimedia capabilities

Resources:

Books or manuals on Windows 95/98
Online Help in Windows 95/98

Materials checklist:

✓ Step-by-Step handout (*JMOD1-10-1*) for each student
✓ Transparency and handout of Activity Sheet (*JMOD1-10-2*) for each student

Equipment checklist:

✓ Computers for students
✓ Printers with paper
✓ Overhead and Computer Projectors

Teaching strategy:

Part 1 – Introductory Discussion

1. Review the exercises completed in the previous lesson and ask the students if all of the new procedures were clear to them. During the review it might be

necessary to demonstrate again some of the exercises for the entire class. Have students perform these demonstrations whenever possible.

2. Explain that the purpose of today's lesson is to experience even more of the ways that a computer can make them productive in a job or in their personal life. Maybe, even have some fun!

Part 2 - Hands-on Computer Activities

3. Distribute the Step-by-Step handout (*JMOD1-10-1*) and provide time for the students to practice the use of switching windows.
4. Distribute the Activity Sheet (*JMOD1-10-2*). Allow enough time for the students to read the instructions and ask any questions they might have. Develop ahead of time (or with the students) the category or categories of items to be included in a supply list. For example, the list could be of supplies needed for some type of job (office, medical, construction, automotive), for computer equipment, for clothing, etc.
5. Before students begin completing the activity sheet on their own, demonstrate how to access the Accessories and perform a simple walk-through of each of the programs -- Wordpad, Calculator, and Paint. Explain how each program will help the students accomplish the tasks on their Activity Sheet.

HOT Activities:

1. Once the students have completed the Activity Sheet, give them the opportunity to use the rest of the available class time to make more examples of printed lists with correct calculations and drawings. Determine a scoring scheme for extra credit based on the complexity of each new example.
2. Ask students to demonstrate some of the Multimedia features in Accessories like the Sound Recorder or CD player and encourage the students to try them after completing their assignment.

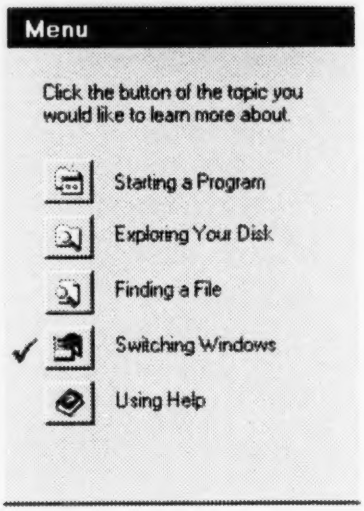
Assessment Methods:

- Observation of students accomplishing tasks outlined in the Step-by-Step handout and Activity Sheet.
- Written evaluation and feedback from instructor to the Activity Sheets prepared by students.
- Assessment of students' initiative taken to produce additional lists and demonstrate use of multimedia features.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 1-10

1. Click Start.
2. On the Start menu, point to Programs.
3. On the Programs menu, point to Accessories and click on Tips and Tour.



Menu

Click the button of the topic you would like to learn more about.

Starting a Program
Exploring Your Disk
Finding a File
✓ Switching Windows
Using Help

1. Complete the section of the tour titled "Switching Windows" as shown in the picture.

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Activity Sheet
Lesson 1-10

1. Develop a list of ten (10) supplies with the approximate costs. Type the list in Wordpad and print a copy of your results.

For example:	Pair of scissors, $7.95
	Roll of masking tape, $1.50

2. Using the computer's calculator, add up the costs of the list of 10 items and write the total in the bottom right-hand corner of your printed copy.

3. Using the Paint program, draw a simple picture (as best as you can) of one of the items on your list and print out your results.

4. Turn in your two (2) pages with your name in the top left-hand corner of each page to the instructor when finished.

Module 2:
Developing a Newsletter

Module 2 - Developing a Newsletter

Learner Outcomes:

Word Processing

1. Keyboard at a proficient rate.
2. Format documents, edit documents, and use tables.
3. Create simple word processing documents such as letters, memos and basic reports.

Team Work

4. Organize and work in a team setting.
5. Recognize expertise and to learn from others, and demonstrate collaborative decision-making.
6. Work and communicate effectively with persons of different backgrounds.

Task Management

7. Organize and prioritize multiple tasks in the most effective way.
8. Allocate time and resources according to task complexity and priority.
9. Evaluate task outcomes and continuously improve process.

Documentation and Business Communication

10. Explain the purpose and process of communication (oral and written) in organizations.
11. Create and present accurate and effective communication (oral and written) tailored to the specific purposes and needs of the audience.

Prerequisites:

Keyboarding experience; knowledge of basic computer functions and Windows

Total Class Time: Approximately 20 hours

Outside readings and other resources:

Basics of Business Writing, AMACOM
Communicating for Success, Southwestern Publishing Co.
Word 97 for Windows for Dummies, Dan Gookin
Word 97 for Windows for Dummies: Quick Reference, Peter Weverka

Module 2 - Developing a Newsletter

Module overview:

In this module you will learn the features of a word processor as you develop a professional-looking, business document such as a newsletter. The abilities to use a word processor and to communicate effectively are very important in many different types of jobs.

A newsletter is a great way to tell a group of people many different stories all at once. Many families use a newsletter during the holidays to inform relatives and friends about all the events of the past year. Most clubs and churches also produce newsletters, usually on a monthly basis, to let their members know about activities and up-coming events. And, there are newsletters for every topic imaginable. Just try a simple search on the Internet to see all of the ones available!

The newsletter that you create will be two pages in length and require printed envelopes for mailing. Throughout the lessons you will practice writing and editing articles for your newsletter as well as enhancing the look and presentation of the information with pictures, charts, and tables.

For your portfolio, you will produce:

1. A professional memo and a business letter.
2. Edited and formatted articles.
3. A work plan for producing the newsletter.
4. An attractive newsletter and envelopes with printed mailing and return addresses.

Lesson Titles:

- 2-1 Developing a Professional Document
- 2-2 Writing Your Articles
- 2-3 Editing Your Articles
- 2-4 Making It Look Good
- 2-5 Making It Look Even Better
- 2-6 Is It Manual or Automatic?
- 2-7 Designing the Newsletter's Layout
- 2-8 Adding Additional Content
- 2-9 Previewing the Rough Draft
- 2-10 Completing the Finished Product

Developing a Newsletter

LESSON 2-1: Developing a Professional Document *Approx. time: 1 class*

Lesson overview:

In this lesson, students will be introduced to the features of the word processing program being used and explore prepared document files. This will also be an opportunity to gain insight into the role of communication in organizations.

Remember: Depending upon which word processor is installed on your classroom computers, some of the terminology below may be different.

Sample documents using the International Recording Company (IRCO) are provided throughout the lessons if you would like to use a business simulation and are referenced in the optional sections marked IRCO Simulation.

Students will demonstrate the ability to:

1. Present the different forms of communication and their respective purpose in the organization. (F/D&BC)
2. Use navigational keys and functions. (T/WP)
3. Clarify when further information is required. (ES-6)
4. Share information and explain procedures to others. (ES-7)

Prerequisites: Basic computer functions, Windows, and keyboarding

Content required:

1) Role of communication in organizations
2) Different forms of formal business communication
3) Brainstorming techniques for writing
4) Understanding the word processing program:
    a) Screen layout
    b) Using the mouse
    c) Choosing commands
    d) Using dialog boxes

Resources:

Word processor manual
Business textbooks (if available)
The Basics of Business Writing, Marty Stuckey

Materials checklist:

- ✓ Module 2 Overview *(JMOD2-Ovr)* handouts and transparency
- ✓ Step-by-Step Handout *(JMOD2-1-1)* which may need to be customized by instructor depending on Word Processing program used

- ✓ Transparency of screen layout of word processing program or projection unit for computer display
- ✓ Examples of actual business memos, faxes, letters, reports and newsletters
- ✓ Sample of IRCO Simulation Overview (*JMOD2-1-2*)

Equipment checklist:

- ✓ Computer installed with a word processing program
- ✓ Printer with paper
- ✓ Overhead projector
- ✓ Computer display projector

Teaching strategy:

Part 1 - Classroom Discussion

1. Distribute the handout of the Module Overview (*JMOD2-Ovr*) and explain the purpose of the module as the students read along.
2. Discuss the role of communication in different types of organizations. For example:
   - Establishes a feeling of unity between departments/branch/employees/administrators
   - Communication should be kept relevant to the subject
   - Speed in giving feedback is essential
   - It is clear, engages one's attention, targeted to audience, and enjoyable (if possible)
3. Identify the different forms of formal business communication, such as: memos, faxes, letters, reports, and newsletters. Company newsletters keep everyone informed and are an efficient method of communication for policy items, personnel, social events, etc.
4. Pass around actual samples of the above for students to see.
5. Help the class develop a list of rules for good organization and communication (accurate, free from errors, etc.) and display for the length of the module on the white/black board.
6. Develop a theme for the newsletters with the students. The content could be based on events at the center, on an organization or business in which the students are interested, or on the IRCO Simulation.

IRCO Simulation-Optional

- Distribute the IRCO details (*JMOD2-1-2*) and give the students time to review the information.
- Ask students to identify background information on the company and requirements for the newsletter as stated by Jordan. Students should remember that the newsletter 1) will be sent to several branches in US and world-wide, 2) must not exceed two pages, and 3) must have as many articles as possible from different employees.

Part 2 - Hands-On Computer Activity

7. Distribute the Step-By-Step handout (*JMOD2-1-1*) and team students if possible, so that an already experienced student is working with one with no experience.
8. Review basic operations for use of computer, if necessary:
   - start-up
   - selecting an icon on the desktop
   - opening the word processing program
9. Allow students to demonstrate to each other the features of the word processing program listed on the handout.
10. Observe the students as they complete the steps of locating, opening, closing, saving and printing the specified sample files.

HOT Activities:

1. Direct students to analyze the contents of other folders where they might explore additional types of document files.
2. Have students develop their own original drawing of the screen layout of the word processing program being used with parts labeled correctly.
3. Instruct students to analyze each category of menu commands, identify the most commonly used commands, and develop a quick reference guide listing the function of each command chosen.
4. Assign students the task of bringing in an example of a business document published in a newspaper or magazine (such as a letter to the editor), and preparing a written evaluation of its effectiveness.

Assessment methods:

- Instructor observes students working in pairs on the computer (peer teaching and demonstrating).
- Evaluation by instructor of student drawing of screen layout. Display of best examples.
- Evaluation by instructor and other students of best quick reference guides.
- Contribution of example of business document by students and evaluation by instructor of written evaluation.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 2-1

1. Turn on your computer.

2. Select the word processing program.

3. Find the following on the computer screen:
    - Title Bar
    - Menu Bar
    - Toolbars
    - Rulers
    - Document Marker
    - View Buttons
    - Status Bar

4. Use the Mouse to:
    - Point
    - Click
    - Drag
    - Change Pointer Shapes

5. Review Commands which are available:
    - Use Toolbar Buttons
    - Choose Commands from Menus
    - Choose Commands from Shortcut Menus
    - Try Shortcut Keys

6. Exit the word processing program.

Developing a Newsletter for the Company
Lesson 2-1

IRCO Simulation:

Putting You in the Picture: As a new Production Assistant with International Recording Company (IRCO), you have an opportunity to participate in a variety of company activities. With branch offices in several cities in the US and overseas, as well as fewer than 100 employees, there is always a need for your help whether it's in Administration, Marketing, Recording, or any other of the many departments. IRCO's President, Jordan Ono, along with the talented management team of Leslie Thompson, the Vice President of Marketing; Darryl Hughes, the Administrative Assistant to the President; and Jo Santiago, the Production Manager, is always seeking ways to improve the company.

Here you are now -- your first month at work! The CEO, Jordan Ono, tells you that the company has now grown to the point that they need a company newsletter and that you are to produce this newsletter every month. He assumes that you have the computer skills to accomplish this task. You don't, but you tell him you'll learn, and will have the first newsletter on his desk as soon as possible. Darryl Hughes, his Administrative Assistant, will provide any information or guidance you might need throughout the process.

Jordan told Darryl that he would like your finished product to be an attractive two-page newsletter that focuses on current and new employees. In addition, since IRCO has overseas and nationwide offices to which you'll need to send the newsletters for distribution to the employees, it will be necessary also to print envelopes and labels for mailing to each of the offices.

Darryl sent out a request to every employee to submit something to include in the first company newsletter. Since nearly everyone responded, you'll have to make a decision as to which articles to include, shorten, or hold for the next publication. Plus, many need editing.

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Developing a Newsletter

LESSON 2-2: Writing Your Articles *Approx. time: 1 class*

Lesson overview:
Students will practice file management procedures and develop the text for a document which will be created.

Students will demonstrate the ability to:
1. Create business documents in standard formats and styles. (T/WP)
2. Create, edit, save, retrieve, and print documents. (T/WP)
3. Evaluate the work of others and give constructive feedback. (F/TW)
4. Follow directions to accomplish assignment. (ES-4)

Prerequisites: Lesson 2-1

Content required:
1) Working with documents:
    a) Create a new document
    b) Locate and open an existing document
    c) Print, save, and close a document
    d) Use Help screens

Resources:
Word processor manual
Business textbooks (if available)
The Basics of Business Writing, Marty Stuckey

Materials checklist:
- ✓ Sample of IRCO Simulation Step-by-Step Handout *(JMOD2-2-1)*
- ✓ Sample of IRCO Simulation Memo from Darryl *(JMOD2-2-2)* handout
- ✓ Samples of IRCO Simulation files loaded on network server
    - ❖ Darryl's Memo file *(JMOD2-2-2)*
    - ❖ Reply to Darryl's Memo file *(JMOD2-2-3)*

Equipment checklist:
- ✓ Computer installed with a word processing program
- ✓ Printer with paper
- ✓ Overhead projector
- ✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion
1. Review the accomplishments from the previous class.

2. Have students display examples of business communication that they have gathered.
3. Explain that during this lesson students will learn more about word processing by using the program to print an actual document.

Part 2 - Hands-On Computer Activity

4. Team students so that an already experienced student is working with one with no experience if possible.
5. Walk students through the steps of looking and printing of several different document files.
6. Monitor each team's progress as they complete the process.

IRCO Simulation-Optional

As employees of IRCO, each student will receive a memo from Darryl and prepare his or her reply.

- Distribute the Memo from Darryl (*JMOD2-2-2*).
- Distribute the Step-By-Step handout (*JMOD2-2-1*) and have students complete the exercises to print a sheet (*JMOD2-2-3*) on which to write the draft of their article.

Part 3 – Writing Assignment

7. Ask the students to prepare a handwritten draft of their article for the newsletter in the form of a memo replying to a request for content. (The instructor may choose a variety of writing development techniques such as outlining, mapping, bubbling, etc. and identify a theme, seasonal events, etc. to help students in this process.)
8. Remind the students that this information must be completed because it will be used in tomorrow's class.
9. As students complete the writing assignment, ask the teams to review each others drafts and make suggestions for improvement.

HOT Activities:

1. Give the students an opportunity to compare/contrast the features of WordPad in Windows with their own word processor and share the findings in written or oral form. Have them consider and identify the times when the use of WordPad might be more appropriate that a full-featured word processor.

Assessment methods:

- Individual reply memo is prepared and presented. Students self-assess against the list of rules they collectively developed.

- Students review each other's drafts in small groups and provide constructive feedback.
- Instructor reviews drafts and offers exemplary drafts to class as models.
- Students revise their own drafts and submit to instructor for evaluation/feedback.
- Instructor observes students working in pairs on the computer (peer teaching and demonstrating).

Instructor evaluation and comments for improvement:

IRCO Simulation
STEP-BY-STEP HANDOUT
Lesson 2-2

1. Turn on your computer.

2. Select the word processing program.

3. Locate Darryl's Memo in the file named **JMOD2-2-2**:
   - ➢ Open the file
   - ➢ Close it

4. Locate the Reply to Darryl's Memo in the file named **JMOD2-2-3**:
   - ➢ Open the file
   - ➢ Save As using your name
   - ➢ Print the new file using the Toolbar

5. Exit the word processing program.

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International Recording Company

Memo

To: ALL IRCO Employees

From: Darryl Hughes

CC: Jordan Ono

Date: October 16, 2000

Re: An article for the new Company Newsletter

Next month we will be issuing our first monthly company newsletter! The newsletter will let all of you know about company activities, new policies and procedures, what is going on at the different branches, employee news (there are now over 100 of us), and upcoming social events.

I am sure you will be as excited about this as I am. Jordan would like to extend an invitation to each of you to take a few minutes to create your own article to submit for publication in the newsletter. He knows that there may not be enough room in this first edition for everybody's articles, but we will make room in subsequent issues.

Please send me a memo containing the text for your article no later than TOMORROW MORNING so that I will have time to get it to the new editor for our newsletter.

Thank you for your cooperation.

International Recording Company

Memo

To: Darryl Hughes

From:

Date:

Re: Contribution to new Company Newsletter

LESSON 2-3: Editing Articles for the Newsletter *Approx. time: 1 class*

Lesson overview:

During this class students will practice editing techniques.

Students will demonstrate the ability to:

1. Keyboard at a proficient rate. (T/WP)
2. Create, edit, save, retrieve, and print documents. (T/WP)
3. Use search and replace, navigation keys and functions. (T/WP)
4. Use word-processing utility tools including spell checker, thesaurus and grammar checker. (T/WP)
5. Evaluate and effectively use the various communication techniques and formats. (F/D&BC)
6. Recognize poor writing styles and be able to proofread and edit, using correct grammar, spelling and sentence structure. (F/D&BC)

Prerequisites: Lessons 2-1 and 2-2

Content required:

1) Definition of edit or editing and proofreading
2) Writing style considerations
3) Editing Text in a Document:
   a) Selecting and Replacing Text
   b) Copy/Paste with the Clipboard
   c) Move by Drag/Drop
   d) Undo
   e) Finding and Replacing Text
4) Editing and Proofing Tools:
   a) Checking Spelling
   b) Looking up Words in the Thesaurus

Resources:

Word Processor Manual
Business Textbooks if available (section on proofreading/appropriate language)
The Basics of Business Writing, Marty Stucky AMACOM
How to Speak and Listen Effectively, Harvey Robbins, AMACOM

Materials checklist:

- ✓ Draft of article by prepared by each student
- ✓ Sample handouts of IRCO Simulation Article #1 *(JMOD2-3-2)*, Article #2 *(JMOD2-3-3)*, New Article #1 *(JMOD2-3-5) and* New Article #2 (*JMOD2-3-4*)
- ✓ Sample IRCO Simulation Step-By-Step Handout *(JMOD2-3-1)*

- ✓ Sample IRCO Simulation files loaded on network server
  - ❖ Article #1 file *(JMOD2-3-2)*
  - ❖ Article #2 file *(JMOD2-3-3)*

Equipment checklist:

- ✓ Computer installed with a word processing system (like Word, Works, WordPerfect) for each student
- ✓ Printer with paper
- ✓ Ten minute timer if used for typing exercise

Teaching strategy:

Part 1 - Preparatory Activity

1. Review accomplishments in Lesson 2-2 and check for completed writing assignments.
2. Ask students to define the term 'edit or editing' and 'proofreading'. Develop class definitions and write these on the board.
3. Explain that the purposes of today's exercises are to familiarize the students with editing tools available in any word processing program and to analyze the use of appropriate language and styles for articles in the newsletter
4. Gather from students the examples of inappropriate language or poor writing styles that they found in the drafts of their articles and discuss corrections. Students should be made aware of the fact that the accuracy of language usage, grammar, spelling, etc. is essential to the professional appearance of the company to the newsletter readership. Poor spelling equates to a sloppy company image; also, if students' names are on their articles, the quality reflects on them, too, as individuals.
5. In the discussion, emphasize style considerations such as:
   - Wordiness
   - Passive construction
   - Pompous language
   - Variable sentence length (sentence structure)
   - Word choice
   - Humor
   - Content
   - Organization
   - Conventions (spelling, capitalization, paragraphing, etc.)
6. Have students negotiate with each other to agree on the types of edits that should be made and list these ideas along with the other rules for good organization and communication developed in Lesson 2-1.
7. Conclude the discussion by emphasizing to the students the relevance of the newsletter's content to the need and purpose of the intended audience.

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Part 2 - Hands-On Computer Activity

8. Conduct a timed activity for the students which will incorporate the typing of their draft and making any edits before printing out the most correct version. NOTE: It might be necessary to explain first the concept of typing the body of the text first (letting the text wrap – no carriage returns) and of not making edits until typing is completed.
9. Instruct the students to save their file four times naming them with their initials and a Revision #. Then have them print four copies.
10. Group the students in teams of four and assign them a # which will correspond with the revision file that they will edit.
11. IMPORTANT: Have them make the edits to the revision files that correspond to their assigned team number. For example, in Team A, member #1 would edit each file in his or her group that has a #1 in the title.
12. Retrieve both the handwritten and all of printed/edited copies of the memos from the students as they complete the exercise for review.

IRCO Simulation-Optional

- Have students locate and retrieve the file with each student's name that is the reply to Darryl's Memo. Instruct them to type and edit the text of their own article in the Reply to Darryl Memo file.
- Distribute the sample articles submitted by employees at IRCO (*JMOD2-3-2* and *JMOD2-3-3*) and the Step-by-Step handout (*JMOD2-3-1*) to each of the students. Have students study the content of the unedited versions of Articles #1 & #2 before starting the Step-by-Step exercises.
- Observe as they proceed through the editing steps for Article #1 and Article #2 and offer assistance if required.
- Be sure that each student prints a copy of each file to proofread. After allowing time for the students to complete the editing tasks, discuss the changes that they made and compare with other students.

HOT Activities:

1. Instruct students to analyze the types of editing which they accomplished and to develop major categories. Taking these categories, have each student prepare his/her own personal checklist to be used when typing any text.
2. Have students research the marks used by professional proofreaders and make a display showing the marks and how they are used.
3. Identify a published article, either in a magazine, in the newspaper, or on the Internet and ask students to evaluate the writing style based on the class rules developed for good organization and communication.

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Assessment methods:

- Timed activity assesses individual word processing know-how, keyboarding efficiency, and application of online editing tools.
- Final memo plus revisions can be used to demonstrate student understanding of writing/editing process.
- In teams, students can generate a list of benefits to proofreading and editing written work. Oral summaries can be shared with the class.
- Compare different versions to determine the speed/accuracy of typing, the ability to proofread/edit, use of appropriate language in the content, and correct format of memo for each student to determine a grade.

Instructor evaluation and comments for improvement:

IRCO Simulation
STEP-BY-STEP HANDOUT
Lesson 2-3

1. Open the word processing program.

2. Locate and retrieve the file named *Article #1*.

3. Select and replace the following text using the methods of overtyping and delete/insert:
   - **2 to two**
   - **2 to Two**
   - **10 to ten**

4. Copy "**The company offered me a job in their public relations department and I started last week**" and paste at the end of the paragraph.

5. Move by Drag/Drop the "**Submitted by Milton Scrivener**" to a place below the paragraph.

6. Undo the previous move.

7. Find/replace **New Delhi** with **India** editing for readership that may not know where New Delhi is located.

8. Use Spell and Grammar Checker to make the following changes:
   All: writin with writing
   One: Universiti with University
   Grammar: which to that

9. Use Thesaurus to change "**eclectic**" to the word "versatile" which is a more common word even though eclectic is correct.

10. Upon completion, save as *New Article #1* and print a copy to be placed in your portfolio.

11. Close the *New Article #1* file.

Continue on the next page.

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1. Locate and retrieve *Article #2*.
2. Print a copy of the file to proofread.
3. Consider the use of appropriate language for different types of business documents.
4. Mark items which you feel need to be edited.
5. Make these editing changes on the computer file.
6. Save as the editing changes in a file named *New Article #2*.
7. Print a copy of the edited version.
8. Compare your changes to those of other students in your class.
9. Note any edits which you might have missed and make these changes to your file.
10. Save and print the final version to be place in your portfolio.
11. Close *New Article #2* file.

IRCO Simulation
Unedited Article #1

Submitted by Milton Scrivener

My name is Milton Scrivener, and writin is my talent. The company offered me a job in their public relations department and I started last week. Back in high school in the late '70s I won several awards for essay and poetry writin, and it was for my expertise in English that I won a scholarship to the Universiti of Washington in Seattle. I graduated with a BA in 1983.

Unlike my peers, who immediately found jobs, a decision which I now wonder about, was made to travel for a year or 2. I traveled, found a guru in New Delhi, and formed a band in which I played the guitar and sang, and joined the Peace Corps.

2 years had become 10 when I found myself back again looking for a job. My portfolio of published articles on music and travel attracted the attention of Ms. Thompson of IRCO. She liked my background and experience, my writin style and my eclectic taste in music.

IRCO Simulation
Unedited Article #2

Submitted by Willie Valentine

Hey dudes, I also work in Production but i used to work at another groovey place at 489 State Sreet near irco's office. It's called like Piesmart and wow do they dish out the best pizza. There is zillions of coool combinations of toppings with very specail prices. The best one I made is called The Floppy Disk and is a thinn crust pizza with like Pineapple bits, bite size pieces of like Canadian Bacon, sections of like Mandarin Oranges, and fragmented pieces of like Spinache, all on a magnetic cover of like Mozarella Cheese and a base of great like Tomato Sauce. They even delivers to the office, guys. just call 555-PIES (555-7437). A 14" pizza starts at $8.95 and a really expensive one can cost as much as like 25 big ones. the owner, Frankie Laserno, said if you mention my name, he'll give you like a 10% discount on a 16 incher. See ya in the lunch room.

IRCO Simulation
New Article #2

Submitted by Willie Valentine

I also work in Production but I used to work at another groovy place at 489 State Street near IRCO's office. It's called Piesmart and it has the best pizza. There are zillions of cool combinations of toppings with very special prices. The best one I made is called The Floppy Disk. It has a thin crust with pineapple bits, bite-size pieces of Canadian bacon, sectors of Mandarin oranges, and fragmented pieces of spinach, all on a magnetic cover of Mozzarella cheese and a base of great tomato sauce. They even deliver to the office. Just call 555-PIES (555-7437). A 14" pizza starts at $8.95 and a really expensive one can cost as much as $25. The owner, Frankie Laserno, said if you mention my name, he'll give you a 10% discount on a 16-inch pizza. See you in the lunchroom.

IRCO Simulation

New Article #1

Submitted by Milton Scrivener

My name is Milton Scrivener, and writing is my talent. Back in high school in the late '70s I won several awards for essay and poetry writing, and it was for my expertise in English that I won a scholarship to the University of Washington in Seattle. I graduated with a BA in 1983.

Unlike my peers, who immediately found jobs, a decision that I wonder about now was made to travel for a year or two. I traveled, found a guru in India, and formed a band in which I played the guitar and sang, and joined the Peace Corps.

Two years had become ten when I found myself back in Seattle again looking for a job. My portfolio of published articles on music and travel attracted the attention of Ms. Thompson of IRCO. She liked my background and experience, my writing style and my versatile taste in music. The company offered me a job in their public relations department and I started last week.

LESSON 2-4: Making It Look Good *Approx. time: 1 class*

Lesson overview:
Now that students have familiarized themselves with using the word processor, it's time to introduce additional features as well as to develop a work plan.

Students will demonstrate the ability to:
1. Use simple formatting functions. (T/WP)
2. Evaluate and effectively use various communication techniques and formats. (F/D&BC)
3. Identify tasks and their interdependencies. (F/TM) (ES-8)
4. Break down tasks into activities and perform activities. (F/TM)
5. Prioritize tasks and organize in appropriate sequence. (F/TM)
6. Estimate time to complete a task. (F/TM)
7. Develop schedule of tasks to be completed. (F/TM)

Prerequisites: Lessons 2-1, 2-2, and 2-3

Content required:
1) Formatting Text:
    a) Understanding and Choosing Fonts
    b) Changing the Point Size
    c) Changing Font Attributes
    d) Text Alignment
2) Understanding task management principles for the production of the newsletter.

Resources:
Word Processor Manual
Business Textbook if available (task management)

Materials checklist:
- ✓ Printed and file copies of all the articles edited by each student
- ✓ Example of Student Work Plan *(JMOD2-4-3)*
- ✓ Sample of IRCO Simulation Article #3 *(JMOD2-4-1)* and formatting specifications from Darryl for each article *(JMOD2-4-2)*
- ✓ Students' article files named using their own name
- ✓ Sample IRCO Simulation files loaded on network server:
    - ❖ Article #3 file *(JMOD2-4-1)*
    - ❖ file named New Article #1
    - ❖ file named New Article #2

Equipment checklist:

- ✓ Computer installed with a word processing system (like Word, Works, WordPerfect) for each student
- ✓ Printer with paper
- ✓ Computer projector

Teaching strategy:

Part 1 - Introductory Activity

NOTE: *If it was observed during the previous assessment activity that students had trouble finishing the graded assignment because of typing speed, the instructor may want to suggest additional practice for these students in keyboarding, using a software typing program such as "Mavis Beacon Teaches Typing".*

1. Introduce today's lesson by reviewing the types of editing skills the students practiced yesterday and explaining the students will make further changes in how their articles look, as well as develop a plan of tasks for completing the newsletter.

Part 2 - Hands-On Computer Activity

2. Explain that each of the four articles will be formatted with different results.
3. List on the board and then demonstrate each of the ways that the following features can be used to format text:
    Font
    Point size
    Bold text
    Italicized text
    Underlined text
    Variations in alignment - right, center, left
4. Instruct the students to use the techniques in different ways in each article. Observe the formatting process and offer assistance when required.
5. As students complete the formatting of each article, have them save the newly formatted documents with the file names of Look 1, Look 2, Look 3, and Look 4.
6. Gather also four printed copies from each student at the end of the activity.

IRCO Simulation-Optional

Instructions for editing and formatting the three articles from Lesson 2-3 along with a new one are provided by Darryl, the Administrative Assistant.

- Distribute the new article (*JMOD2-4-1*) and the instructions from Darryl (*JMOD2-4-2*) on formatting to each student.
- Monitor the completion of the exercises and gather the four printed copies at the end of the class.

HOT Activity:

1. Based on the lesson schedule, conduct a class discussion on how to plan the completion of the newsletter, using principles of task management. These steps should include:
    - Identifying and listing all of the tasks to accomplish the production of the newsletter
    - Sequencing the tasks to be accomplished in the proper order
    - Identifying sub-tasks for each activity
    - Grouping related tasks or activities
2. Have students list available days to work on the left side of a sheet of paper, leaving enough space between each day and at the top, title the sheet **WORK PLAN**.
3. Ask students to analyze the tasks necessary to complete the newsletter assignment.
4. Instruct the students to evaluate the identified tasks based on priority and assign an order or number to each task.
5. Students should then develop an estimate of the length of time and list the tasks by the appropriate days.
6. To the far right side of the sheet, instruct the students to label a column When Completed so that they can assess their progress. (Refer to the Work Plan sample provided in the file named *JMOD2-4-3*)
7. Students should place the work plan in their portfolio for future use.

Assessment methods:

- Review and comparison of each student's four formatted articles to the expected results.
- Observation of participation in the class discussion and completion of a work plan.
- Completed work plans are collected, reviewed, and assessed by peers and instructor.
- Exemplary work plans are shown to class as models. Students revise their work as necessary.
- Students compare their own formatted articles to expected results, and revise their articles as appropriate.
- Students provide written self-assessment of participation in class discussion; instructor observations are discussed and compared with students' own.

Instructor evaluation and comments for improvement:

IRCO Simulation
Article #3

Submitted by Mary Magellan

I am Mary Magellan and I work in the Human Resources Department. I am responsible for making sure everyone in the company gets paid. I was born here and have lived here all my life. My favorite sport is walking. I have found that the best form of exercise after working a long day at the office is to walk around the Town Center Mall five times. Not only do I become healthy, but I also enjoy window shopping for bargains. Since I began my program of walking four months ago, I have actually lost seven pounds and built up my stamina so that I can now walk my five rounds in less that twenty minutes. Of course, this is dependent on any exceptional sales that I might encounter as I pass by all of the stores in the mall. Some of my favorite stores are Target, The Gap, and Nordstroms. The benefits of this sport are two-fold. Not only will my body look good, but I will also be well dressed!

IRCO Simulation
From the Desk
of
DARRYL HUGHES

Thanks so much for getting started on editing the articles for our company newsletter. I showed your article to Jordan and he is very excited about the newsletter.

I thought we should experiment with some different looks for the newsletter before we make a final decision on the layout. With the articles that you have edited, try the formatting specifications I have listed below and print out a copy of each example.

Filename	Article #3	New Article #1	New Article #2	Your Article
1) Font	Arial	Times New Roman	Courier New	Your Choice: ______
2) Point Size	12	10	8	9
3) Bold Text	Title (Article #3)	Title	Title	Title
4) Italicize Text	By-line (Submitted by....)	By-line and Title	By-line	Your Name
5) Underline Text	five, seven, five, twenty	scholarship, ten	best pizza, 10% discount, and Title	Your Choice: ______
6) Align Right	By-line	By-line	By-line	Title
7) Align Center	Title	All Text	Title	All Text
8) Align Left	All Text	Title	All Text	Your Choice: ______
9) Save As	Look 3	Look 1	Look 2	Look 4

Don't forget to print out a copy of each article that you have formatted!

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Example of Student Work Plan Format

DAY	TASK DESCRIPTION	WHEN COMPLETED

LESSON 2-5: Making It Look Even Better *Approx. time: 1 class*

Lesson overview:

The students will learn additional formatting techniques and practice the ones from previous lessons. Upon completion of today's lesson, students should now begin to track their progress toward finishing the final product.

Students will demonstrate the ability to:

1. Use simple formatting functions. (T/WP)
2. Organize communication in a logical sequence, and support communication with necessary data. (F/D&BC)
3. Monitor and evaluate progress of each task. (F/TM, ES-15)

Prerequisites: Lessons 2-1, 2-2, 2-3, and 2-4

Content required:

1) Formatting Paragraphs:
    a) Indenting Text
    b) Using the Tab Key
    c) Line Spacing
    d) Adding Borders and Shading
    e) Applying Bullets and Numbers
2) Reasons for enhancing text with formatting techniques

Resources:

Word Processor Manual
Business Textbook if available

Materials checklist:

✓ WORK PLAN developed in Lesson 2-4
✓ Sample of IRCO Simulation file of Leslie's Draft (*JMOD2-5-1*), prepared by the instructor which incorporates one method of indenting text, setting of tabs, and line spacing
✓ Sample of IRCO Simulation handout called Leslie's Draft (*JMOD2-5-1*)

Equipment checklist:

✓ Computer installed with a word processing system (Word, Works, WordPerfect) for each student
✓ Printer and paper
✓ Computer projector

Teaching strategy:

Part 1 - Introductory Activity

1. Return the four articles to each of the students that were completed in the previous lesson and discuss with the students any quality issues observed.
2. Introduce the lesson and demonstrate for the students the following methods:
    Indenting text
    Line spacing
    Applying a border around the entire page.
    Applying shading to one of the paragraphs.
    Applying bullets to a list
    Automatic numbering to the another list
3. Ask students to continue to analyze their copies and list as many ways to improve the content as they can using these methods.
4. Have the students list the content improvements on their handouts.

Part 2 - Hands-On Computer Activity

5. Instruct students to open the word processing program and apply the formatting changes to each of their files containing their articles.
6. Allow time for the student to type and proof these changes
7. Remind the students to print new copies to turn in before saving, closing the files, and exiting the program.

IRCO Simulation-Optional

The excitement is building within IRCO about the impending newsletter. Now, Leslie, the VP of Marketing wants her own column to tell about her upcoming activities. She has sent over a very rough draft that needs to be typed and edited.

- Distribute the handout of Leslie's Draft (*JMOD2-5-1*) allowing time for the students to review the content.
- Instruct the students to open the word processing program and create a new file to be saved as LESLIE'S DRAFT.
- Ask the students to choose one method of indenting text and of line spacing to include in their typing of Leslie's Draft.
- Allow time for the student teams to edit the text of Leslie's draft, making the changes in the organization of the information and using the new formatting techniques.
- Ask the students to try other types of formatting with their typed version of Leslie's Draft, for example: 1) apply a border around the entire page, 2) apply shading to one of the paragraphs, 3) apply bullets to one of Leslie's lists, and finally 4) automatic numbering to the other list.

HOT Activities:

1. Have student teams analyze each of their four printed articles to identify other ways which each could be formatted to make them more attractive to a potential reader. List these ways on each document.

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2. Ask students to develop a chart listing the formatting features which could improve the appearance of a typed article in categories like:
   - Helps reader visualize better
   - Points out importance
   - Makes the page look more interesting
3. Instruct students to review the WORK PLAN that they developed yesterday and evaluate their progress based on expected accomplishments for the day and note any changes to schedule.

Assessment methods:

- Global instructor review of student revisions to draft. Summary comments provided to class. Individuals asked to integrate any additional changes before submission for final evaluation.
- Students work in teams to prepare a "master list" of formatting techniques (based on individual charts developed); the results are shared orally with the rest of the class.
- Individual work plan updates are reviewed by the instructor.

Instructor evaluation and comments for improvement:

IRCO Simulation

International Recording Company

from the desk of
Leslie Thompson
Vice President of Marketing

Hi, group. Was so excited to hear that you are working on a company newsletter for us. Here are some of my thoughts that I'd like in an on-going column:

News Flash.... IRCO's Hong Kong office has just signed a letter of intent with one of Japan's hottest new groups, Swinging Sushi. They are expected to record a 2 CD set starting in January at a studio in Tokyo.

We have recruited a number of new artists over the past 6 months. Listed by location, we have signed the following numbers:
Corporate office - 5
Manhattan - 3
Beverly Hills - 8
Hong Kong - 2
Paris - 4

The marketing department is busily preparing to attend a number of trade shows and events this spring. For example, there's NAMM (National Association of Music Merchandisers) in January, MRAA (Music Recording Association of America) in March, and Recording Artists International Convention in February, plus the CMA (Country Music Association) Awards Dinner in May and the Grammies in April.

Just for you new folks: At a trade show, IRCO's booth allows prospective artists interested in our record label to hear the other artists and groups that we have signed. They also get to meet Jordan and visit with some of our sales people. We usually have some kind of a video running to tell passersby about all of our services.

So, as you can see, we in the marketing department are always quite busy. Many of the new production assistants will even have a chance to participate in the preparation for some of these activities.

LESSON 2-6: Is it Manual or Automatic? *Approx. time: 1 class*

Lesson overview:
In this lesson, students will develop and produce a formal business letter using a template. Students will also explore a series of automatic formatting techniques using the sample articles and ways to change or create these timesaving features.

Students will demonstrate the ability to:
1. Work with document styles, forms and templates. (T/WP)
2. Create business documents in standard formats and styles. T/WP)
3. Organize communication in a logical sequence, and support communication with necessary data. (F/D&BC)
4. Use clear, focused, specific and grammatically correct language and terminology. (F/D&BC)
5. Monitor and evaluate progress of each task. (F/TM, ES-15)
6. Assess successful completion of each task against standards. (F/TM)

Prerequisites: Lessons 2-1 through 2-5

Content required:
1) Automatic Formatting:
   a) Styles
   b) Templates
2) Developing a Business letter

Resources:
Word Processing Manual
Business Textbook if available

Materials checklist:
- ✓ Students' copies of four articles
- ✓ Step-by-Step Handout (*JMOD2-6-2*) may need to be customized
- ✓ Sample of IRCO Simulation handout of Jordan's request (*JMOD2-6-1*)
- ✓ Disks for each workstation or student files loaded on network server
  - ❖ Look 1 file
  - ❖ Look 2 file
  - ❖ Look 3 file
  - ❖ Look 4 file

Equipment checklist:
- ✓ Computer installed with a word processing system (Word, Works, WordPerfect) for each student

- ✓ Printer with paper
- ✓ Computer projector

Teaching strategy:

Part 1 - Classroom Activity and Discussion

1. Ask each of the students to draft a business letter that will announce the purpose/need for the newsletter and alert the audience to look for its impending arrival in the mail.
2. As students are developing their letters, explain different reasons of business letters and review appropriate language choices for each type of letter.

IRCO Simulation-Optional

Students use one of the templates and respond to a request from Jordan that a permission letter is required from Willie's former employer if they want to include that 10% discount in the newsletter

- Distribute or display the request by IRCO's president for the permission letter from Willie's former employer (*JMOD2-6-1*).
- As students are examining the request, explain different reasons of business letters and review appropriate language choices for each type of letter.
- Ask the students to contribute ideas as to what the steps would be to develop a business letter and record these on the board.
- Have students then individually draft the body of the letter following these steps that they would send to Mr. Laserno.

Part 2 - Hands-On Computer Activity

3. In the word processing program, point out the feature of a document template and allow students time to explore the different types of templates offered.
4. Discuss which of these might be useful and have students choose one to use to prepare their business letter.
5. Have students type, proof, and print their letters, saving the file as Letter 1.
6. Instruct students to exchange their letters with their partner and proof their partner's letter. Proofreaders should place their initials on the letter at the top right.
7. Have students make any final revisions and reprint a final copy to turn in before saving the file.

HOT Activities:

1. Conduct a class discussion for students to share results of their analyses of formats in Lesson 2-5 and introduce the concept of auto formatting and styles.
2. Using the Step-by-Step handout (*JMOD2-6-2*), instruct pairs of students to practice the application of different styles. During this exercise, observe the teams and offer assistance when required. Be sure to collect all of the article printouts for the Style exercise when the students are finished.

Assessment methods:

- Individual style printouts are collected and reviewed by student teams.
- Peer editing teams provide a brief oral report of their findings (what patterns emerged in each other's work).
- Students submit their final letters to instructor for evaluation and commentary.
- Instructor observes students working in pairs on the computer (peer teaching and demonstrating).
- Observation, review and evaluation of Style printouts produced by students.
- Review and evaluation of business letter.

Instructor evaluation and comments for improvement:

JMOD2-6-1

International Recording Company

Memo

To: Darryl Hughes

From: Jordan Ono

Date: October 20, 2000

Re: Approval requested

Please be advised that we should get permission from Mr. Frankie Laserno, the owner of Piesmart, our favorite pizza place, before including an offer to give 10% off the price of a 16" pizza in our company newsletter. I am sure Willie has good intentions, but we should always have something like this in writing for our files.

I'd appreciate it if our new editor would prepare for me a business letter requesting permission which I can send to Mr. Laserno.

Thank you for your attention to this matter.

STEP-BY-STEP HANDOUT
Lesson 2-6

1. Open the word processing program.
2. Locate and retrieve the Look 1 file.
3. Review your suggestions that were noted on your printed copy of the Look 1 file.
4. Identify your word processor's choices of styles.
5. Practice applying different styles within the text.
6. When finished applying styles, save as Style 1 and print.
7. Close the file.
8. Locate and retrieve the Look 2 file.
9. Use this file to modify a style format.
10. When finished, save as Style 2 and print.
11. Close the file.
12. Locate and retrieve the Look 3 file.
13. Use this article to create a new style format and apply it.
14. When finished, save as Style 3 and print.
15. Close the file.
16. Repeat this process with the Look 4 file, developing a style of your own, saving as Style 4 and printing out the results.
17. Close the file.
18. Turn in all of your article printouts for the Style exercise to the teacher.

Developing a Newsletter

LESSON 2-7: Designing the Layout *Approx. time: 1 class*

Lesson overview:
The goal of this lesson is to familiarize the students with features of the word processing program that allow for different types of page layout. During the first part of the lesson, the students will practice a series of these features. During the final segment of the class, students will develop a template for the newsletter using the new features from today's lesson as well as reviewing other features learned in previous lessons and incorporating them into their design.

Students will demonstrate the ability to:
1. Work with columns. (T/WP)
2. Work with document styles, forms, and templates. (T/WP)
3. Use simple formatting functions. (T/WP)

Prerequisites: Lessons 2-1 through 2-6

Content required:
1) Page Design and Layout:
   a) Setting the Paper Size and Page Orientation
   b) Margins
   c) Creating Headers and Footers
   d) Numbering Pages
   e) Creating Multiple Columns

Resources:
Word Processing Manual
Business Textbook if available

Materials checklist:
- ✓ Step-by-Step Handout (*JMOD2-7-1*) that may need to be customized
- ✓ Disks for each workstation or student files loaded on network server
  - ❖ Style 1 file
  - ❖ Style 2 file
  - ❖ Style 3 file
  - ❖ Style 4 file

Equipment checklist:
- ✓ Computer installed with a word processing system (Word, Works, WordPerfect) for each student
- ✓ Printer with paper

Teaching strategy:

Part 1 - Preparatory Activity

1. Return the four Style articles and the business letter to each of the students and discuss any problems students may be having in the use of the word processing programs features.
2. Have students evaluate their progress against items identified on their Work Plan and update accomplishments or additional tasks that were not anticipated.

Part 2 - Hands-On Computer Activity

3. Distribute the Step-by-Step Handout (*JMOD2-7-1*) to each pair of student teams and explain the purpose of today's lesson.
4. Observe the teams as they complete the exercises for the multiple page document and offer assistance when required.

HOT Activities:

1. Instruct the student teams to develop a template for their newsletter following the guidelines on the back of the Step-by-Step handout (*JMOD2-7-1*), and saving the template file as Newsletter. Encourage them to be creative and remind them to print a copy to turn in for review.
2. Have student teams analyze all of the new formatting features available in the word processor and choose the ten that they feel are the most commonly used features. With this list, ask each team to prepare a "QUICK USE" Guide that explains the reason for using the feature (why it was chosen) and the keystrokes for how to accomplish it with the word processor. Display the Quick Use Guides around the classroom upon completion.

Assessment methods:

- Observation, review and evaluation of Newsletter template printout produced by students.
- Templates are produced and a range of "best examples" are shared with class. Students then self-assess their own template against the characteristics of the best examples. Revision time is provided before final submission
- Student teams collaborate to produce the "Quick Use Guides." Peer teams provide oral feedback on the strengths and areas for improvement of other teams' guides.
- Instructor assesses quality of final template designs.
- Students compare work plan updates with each other and then write a short self-assessment on their progress (submitted to instructor).

Instructor evaluation and comments for improvement:

JMOD2-7-1

STEP-BY-STEP HANDOUT
Lesson 2-7

1. Open the word processing program.

2. Create a New file, temporarily called *Document 1*.

3. Minimize the new file.

4. Locate and retrieve the *Style 1* file.

5. Copy the text by highlighting and using the copy command.

6. Close the *Style 1* file.

7. Maximize the new file, *Document 1*, and paste in the text.

8. Repeat this process for the text in the *Style 2* file, the *Style 3* file, the *Style 4* file, and any other text created for your newsletter. Upon completion, there should be at least 3 pages of text.

9. Using the new multiple-page document, practice each of the features below:
   - ➢ Setting the paper size.
   - ➢ Changing the paper orientation.
   - ➢ Changing the margins.
   - ➢ Changing the margins versus using the indents.
   - ➢ Creating headers and footers.
   - ➢ Positioning headers and footers while considering their affect on margins.
   - ➢ Numbering pages.
   - ➢ Creating multiple columns.
   - ➢ Modifying the width of columns.
   - ➢ Deleting or moving columns and the affect on the page layout.

10. Save the file as *Pagelook* and close.

Continue on the Next Page>>>>>>

Characteristics for the Newsletter Template:

- Develop a title called "banner" or "flag" (as header) for the newsletter. Choose any type of font/point size as long as it is readable and extends at least across the top of the page.
- Format the articles in two columns on each page.
- Text style called "Conversational" for use in an articles by other students. Identify possibilities of fonts/point sizes available based on the word processing program which are appropriate for use here.
- Text style called "Normal" for regular use throughout the newsletter in any other articles.

LESSON 2-8: Adding Additional Content

Approx. time: 1 class

Lesson overview:
Students will learn how to place tables and a simple graphic in the text to enhance the visual presentation of the data. Using their work plan, students should be able to compose, type, proof, and print a status report.

Students will demonstrate the ability to:
1. Work with tables. (T/WP)
2. Work with graphics. (T/WP)
3. Create, edit, save, retrieve, and print documents. (T/WP)
4. Present the different forms of communication and their respective purposes in the organization. (F/D&BC)
5. Evaluate and effectively use various communication techniques and formats. (F/D&BC)
6. Organize communication in a logical sequence, and support communication with necessary data. (F/D&BC)
7. Use clear, focused, specific and grammatically correct language and terminology. (F/D&BC)
8. Monitor and evaluate progress of each task. (F/TM)
9. Assess successful completion of each task against standards. (F/TM)

Prerequisites: Lessons 2-1 through 2-7

Content required:
1) Tables
2) Importing and Creating Graphics

Resources:
Word Processing Manual
Business Textbook if available

Materials checklist:
✓ Step-by-Step Handout (*JMOD2-8-1*) may need to be customized
✓ Sample IRCO Simulation handout of Jordan's Memo (*JMOD2-8-2*)
✓ Clipart file

Equipment checklist:
✓ Computer installed with a word processing system (Word, Works, WordPerfect) for each student
✓ Printer with paper
✓ Computer projector

Teaching strategy:

Part 1 - Preparatory Activity

1. Return the Newsletter template copies to each of the students and discuss any discrepancies with them. (Note: If any of the templates need to be corrected, this should be accomplished now before continuing to the next section.)
2. Explain the purpose of the lesson is to learn how to present the information in a table with a graphic as well as to produce a status report based on their work plans.
3. Have students develop some content that can be displayed in a table, such as a publication schedule.

IRCO Simulation-Optional

- Distribute the handout of Jordan's Memo (*JMOD2-8-1*) to the students with some additional information to be included in the newsletter. The text of his welcome will become a new file with a table containing the sales figures he has provided while displaying the memo on the overhead or the computer projector.
- Allow time for the students to review the information before continuing.

Part 2 - Hands-On Computer Exercise

4. Describe how a table works and the different features available in the word processing program for tables, such as modifying the look with different formats. Demonstrate on the computer if possible as the students watch.
5. Distribute the Step-by-Step handout (*JMOD2-8-2*) to each pair of students.
6. Observe the progress of the teams and offer assistance if necessary.

HOT Activity:

1. Instruct the students to develop a status report on their progress of the newsletter. It should be an evaluation of the status of accomplishments from their individual work plans. Explain that they only have a short period of time to compose, type, proof, and print their document, so they need to be resourceful and use time-savers (templates, spell checker, etc.) Have the students save their file with the name of *JRESPONSE*. Retrieve the printed copies from each student at the end of the allotted time.

Assessment methods:

- Review and evaluation of students' typed version of Article J.
- Observation of students working effectively in pairs.
- Students use their updated work plans and written self-assessment from Lesson 2-7 to formulate their status reports.
- Students (in pairs) assess their partner's ability to follow the step-by-step handout without outside assistance. Each partner discusses his/her own results and seeks feedback.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 2-8

1. Open the word processing program.

2. Create a new file to be named Article J.

3. Type the content that you developed or were given. Proof your typing.

4. Set up a simple table using the data. Leave an area for a title and a graphic to be inserted later.

5. Identify how a table works and the different features available in the word processing program for tables, such as modifying the look with different formats.

6. Practice other ways to modify or edit the table by changing the size of the cells.

7. Fill in the area (cell) reserved for a title.

8. Using clip art provided with your computer system, import a graphic into the document and edit it.

9. Practice the process until proficient.

10. What are additional ways to visually enhance the text with any drawing options available on your word processing program?

11. Save the file as Article J and print a copy to turn in to the teacher.

12. Close the file.

JMOD2-8-2

International Recording Company

Memo

To: Editor of the Newsletter

From: Jordan Ono

Date: October 21, 2000

Re: Message from the President

It has occurred to me that, for this first company newsletter, I should provide a word of welcome to all of the new production assistants as well as some news about our company's performance. With Darryl's help I have written the text for my welcome. Beneath that I have gathered some numbers from our last quarterly report. Please see that these two small articles are included in your first edition. I am anxious to see the final version and would like an update on your progress as soon as possible. Thanks.

Welcome from the President

It is with great pleasure that I welcome all of our new employees to the International Recording Company. We at IRCO are very proud of our achievements and, with your help, look forward to an exciting and profitable future.

I would like to encourage each one of you to take advantage of all the benefits IRCO has to offer its employees, so be sure to see Matt Benson or Patricia Ayres in Personnel if you have any questions.

Never hesitate to strive for excellence in your work performance. You will be rewarded! Regards, Jordan Ono

Sales Results for Previous Quarter

July: $853,677 **August:** $944,860 **September:** $1,031,045

Developing a Newsletter

LESSON 2-9: Previewing the Rough Draft *Approx. time: 1 class*

Lesson overview:
In this lesson, students will be learning how to preview a document before it is printed, as well as to make changes to the format using the printing options. This section also introduces the printing of envelopes or labels.

Students will demonstrate the ability to:

1. Use print previews and print options. (T/WP)
2. Monitor and evaluate progress of each task. (F/TM, ES-15)
3. Assess successful completion of each task against standards. (F/TM)
4. Assign adequate resources to completion of task. (F/TM)

Prerequisites: Lessons 2-1 through 2-8

Content required:
1) Printing

Resources:
Word Processing Manual
Business Textbook if available

Materials checklist:

- ✓ Step-by-Step Handout (*JMOD2-9-1*) may need to be customized
- ✓ Two envelopes and a sheet of address labels available for printing by each student
- ✓ Disks for each workstation or student files loaded on network server
  - ❖ Letter 1 file
  - ❖ Style 1 file
  - ❖ Style 2 file
  - ❖ Style 3 file
  - ❖ Style 4 file
  - ❖ Pagelook file
  - ❖ Article J file
  - ❖ Other files

Equipment checklist:

- ✓ Computer installed with a word processing system (Word, Works, WordPerfect) for each student
- ✓ Computer projector

Teaching strategy:

Part 1 - Preparatory Activity

1. Return the evaluated status reports that were produced by the students in the previous lesson.
2. Discuss any problems as well as point out any outstanding examples.
3. Allow time for students to update their work plan with their progress.

Part 2 - Hands-on Computer Exercise

4. Distribute the Step-by-Step handout (*JMOD2-9-1*) to each pair of students.
5. Monitor the progress of the teams and offer assistance if required.

Part 3 - Classroom Activity and Discussion

6. Have students refer again to their work plan and check off the task of learning how to print envelopes upon completion of the above exercise.
7. Allow students to complete the assembly of the newsletter
8. Have students write down their list on the back of their work plan.
9. Instruct students to work with their partner to collaborate on the content selection and to provide editing/proofreading support, but that each student will be individually responsible for preparing his/her own final version.

Assessment methods:

- Observation by instructor of students working together to complete the final editing of their newsletters.
- Review and evaluation of printed envelopes and labels produced by students.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 2-9

1. Open the word processing program.
2. Locate and retrieve the Letter 1 file.
3. Review the circumstances for producing the letter and prepare to complete the printing of an envelope or a mailing label.
4. Identify the process that the word processing program uses to accomplish these tasks.
5. Using the address of the local post office, create a delivery address for the envelope.
6. Using the address of your center, create a return address for the envelope.
7. Print the envelope.
8. Repeat the process using a friend's address for the delivery address and your center's address for the return.
9. Print the envelope.
10. Using the center's address and following the instructions for your word processor, create a sheet of mailing labels.
11. Print the sheet of address labels.
12. Using the Letter 1 document, practice the print options and preview techniques available without printing.
13. Print a final version of Letter 1.
14. Save and close the file.
15. Exit the word processing program.

Developing a Newsletter

LESSON 2-10: Completing the Finished Product *Approx. time: 1 class*

Lesson overview:
In this final lesson, students will print envelopes or labels for at least four different addresses and participate in a review of the newsletters created by their class for the completion of the newsletter project.

Students will demonstrate the ability to:
1. Use print previews and print options. (T/WP)
2. Follow directions and ask for clarification when further information is required to complete the task. (ES-4, ES-6)
3. Assess successful completion of each task against standards. (F/TM)
4. Work and listen effectively as a team member. (F/TW, ES-5, ES-10)

Prerequisites: Lessons 2-1 through 2-9

Content required:
1) Printing

Resources:
Word Processing Manual
Business Textbook if available

Materials checklist:
- ✓ Three envelopes or mailing labels available for printing by each student
- ✓ Completed version of newsletters by students
- ✓ Sample IRCO Simulation handout of Branch Offices (*JMOD2-10-1*)
- ✓ Handout of Assessment Criteria for each student (*JMOD2-10-2*)

Equipment checklist:
- ✓ Computer installed with a word processing system (Word, Works, WordPerfect) for each student
- ✓ Overhead projector of computer display projector

Teaching strategy:
Part 1 - Preparatory Activity
1. Assign or have the students divide up into four groups.
2. Have each group develop an address which they will use for sending their newsletters.
3. List the address of each group on the board.

IRCO Simulation-Optional
Distribute the handouts containing the addresses of the branch offices for IRCO (*JMOD2-10-1*) to all of the students and assign each student to one a group representing a branch.

Part 2 - Hands-on Computer Exercise

4. Instruct the students to prepare three copies of their newsletters with the appropriately addressed envelopes and 'send' (deliver) to the other student groups. (The instructor may wish to assign specific names to be used by each student for the address labels, depending on the size of the groups.)
5. Monitor the progress of the teams and offer assistance if required.

HOT Activity:

1. Distribute the handout of the Assessment Criteria (*JMOD2-10-2*) to each student, allowing time for the students to ask any questions to clarify requirements for the final version of the newsletter. Ask students to review and evaluate the newsletters that were received at their branch location. Suggest that each team member be responsible for presenting one newsletter and leading the discussion about its content. After all of the newsletters have been reviewed, have each group choose the one that they like most and report to the other groups.

Assessment methods:

- Observation, review and evaluation of printed envelopes and labels produced by students for each of the branches.
- On-time completion of the three copies of the newsletter and three envelopes.
- Evaluation by the instructor of the production and content of the newsletter against the Assessment Criteria handout.
- Students use the assessment checklist to review their newsletter.
- Students review and assess with each other their own portfolio entries to date. A short written self-assessment (submitted to the instructor) describes the student's progress toward the finished product.

Instructor evaluation and comments for improvement:

IRCO Simulation
Addresses of IRCO's other branch offices:

IRCO - Manhattan
286 Fifth Avenue
Suite 3500
New York, NY 10010

IRCO – Beverly Hills
18005 Santa Monica Blvd.
Los Angeles, CA 94365

IRCO - Asia
34 Splendor Road
Number 500
Hong Kong, China

IRCO - Europe
153 Rue de Bouerve
Place Vendome
94531 Paris
France

JMOD2-10-2

Module 2 Assessment Criteria for Printed Newsletter

Student Name:________________________________ **Date:**__________

Class:________________________________

Task Description	**Possible Score**	**Actual Score**
Content		
First Page		
Use Newsletter template	5	
Title of Newsletter as header	5	
Use Conversational Style in student articles	5	
Example of table with graphic	5	
Other articles	3	
Second Page		
Page number only	2	
Graphic to accompany an article	5	
Student articles	3	
Other articles	4	
Format		
Two pages	5	
Two columns each page	5	
Use of different spacing	2	
Use of bullets	2	
Use of shading	2	
Use of borders	2	
Text	2	
Use of different fonts	2	
Use of different point size	2	
Use of alignment	2	
Use of font attributes	2	
Accuracy		
Spelling	5	
Grammar	5	
Appropriate language	5	
Proofread by team member	10	
Three Envelopes with group addresses printed on them	10	
TOTAL SCORE	100	

Module 3:
In Search of Market Competition Or Surf City, U.S.A.

Module 3 – In Search of Market Competition
Or *Surf City, U.S.A*

Learner Outcomes:

Internet
1. Use the Internet as a research tool in a highly efficient manner.

Analysis
2. Gather data to identify requirements and to interpret and evaluate requirements.
3. Analyze the process interactively to continuously improve the outcome.

Research
4. Identify and use traditional and non-traditional sources of information.
5. Apply effectively and choose appropriately from a variety of research methods and tools.
6. Analyze, organize, and present research material.

Documentation and Business Communication
7. Communicate and document information gathered, analyzed, and summarized.

Prerequisites:
Knowledge of basic computer functions, Windows, and word processing

Total Class Time: Approximately 10 hours

Outside readings and other resources:
Internet and World Wide Web: Simplified, Paul Whitehead, Ruth Maran
How the Internet Works: Special Edition, Preston Gralla, Mina Reimer
How the World Wide Web Works, Chris Shipley
The Virtual Community: Homesteading on the Electronic Frontier, Howard Rheingold
The Whole Internet for Windows 95; User's Guide & Catalog, Ed Krol, Paula Ferguson

Module 3 – In Search of Market Competition
Or *Surf City, U.S.A*

Module overview:

Everybody is always talking about the Internet. What exactly is the Internet? It is the world's largest network of computers that links millions of businesses, governments, educational institutions, and individuals, all using modems, telephone lines or other communication methods. Imagine over 90 million people using the Internet and the number of users is growing rapidly!

There are two ways that users connect to the Internet: 1) through a national on-line service, such as AOL or CompuServe, or 2) through a local Internet Service Provider (ISP). Both will charge a fee but each will provide a variety of other services and specialized content for the price.

The World Wide Web (WWW) is one of the most popular parts of the Internet. It contains computer sites that store billions of documents called Web pages. Many times these web pages will also include graphics, sound, animation and even video along with the text.

One important use of the Internet is to check out market competition. If you are looking to buy a product, the Internet is a great resource for getting the best value. On the other hand, businesses of all types use the Internet to determine how to improve their products by identifying and improving upon their competition.

In this module, you will produce for your portfolio:

1. An article excerpt from the Internet.
2. A copy of an Internet Use Policy.
3. A comparison chart of popular browsers.
4. Documented examples of multiple search engine uses.
5. A list of important factors/information that should be included in a search about a product's competition.

Lesson Titles:

- 3-1 Using the Basics
- 3-2 Saving and Editing
- 3-3 Using Basic Search Engines
- 3-4 Browsers....WOWsers
- 3-5 Gotta Keep Searchin', Searchin'

In Search of Market Competition
or *Surf City, U.S.A.*

LESSON 3-1: Using the Basics *Approx. time: 1 class*

Lesson overview:

In this lesson, the functions of the Internet are reviewed and the features of the browser are identified and explored. Students will move between pages by using links and by typing addresses into the browser.

Students will demonstrate the ability to:

1. Use an Internet browser to start and move between Web pages.(T/INT, ES-4)
2. Identify focus and general parameters of task or project. (F/ANL)
3. Explain the use and impact of the Internet on business and society. T/INT)
4. Organize and conduct research. (F/RES, ES-13)
5. Analyze/organize information and present orally and in written form. (F/D&BC, F/ANL)
6. Share information and explain procedures to another classmate. (ES-7)

Prerequisites:

Basic knowledge of using a computer and Windows is required.

Content required:

1) Definitions of Internet terms
2) Examples of uses of Internet in business and society
3) Browser features
4) Naming conventions for addresses

Resources:

Any Internet browser
Access for each student or team onto the Internet.
The Internet for Dummies, John Levine

Materials checklist:

- ✓ Handout of Module Overview (*JMOD3-Ovr*) for each student
- ✓ Step-by-Step handout (*JMOD3-1-1*) which may need to be customized
- ✓ Sample of IRCO Simulation handout (*JMOD3-1-2*)

Equipment checklist:

- ✓ Computer with Internet access
- ✓ Printer with paper
- ✓ Computer display projector

Teaching strategy:

Part 1 - Introductory Classroom Discussion

1. Introduce the lesson by distributing the Module Overview (*JMOD3-Ovr*) and asking the students to describe what they think the ***Internet*** is. Record their ideas on the board. For example: "the Internet is like a huge library."
2. Ask the students what they think a ***browser*** is and to give an example of any they might have used. Again, record their ideas on the board. Using the library example, "a browser lets you into the library and can direct your time there." Internet Explorer and Netscape are two of the most popular browsers people use.
3. Explain that each place you go to on the "net" is a ***site***; there are millions of them! But to accomplish finding the sites, a ***Search Engine*** is used like a card catalog. It will enable you to find a lot of information related to the topic you type into the little box. You get a list of sites with little explanation of what is really there, so you have look at them for yourself.
4. Discuss the applications of the Internet in business and for personal use. For example, ask how many students have purchased some items over the Internet. Probe the students for other ways that the Internet has changed the way we do business. Record these ideas on the board and then ask the students to consider the impact of each of these changes on society.

IRCO Simulation-Optional

- Distribute the IRCO Simulation handout (*JMOD3-1-2*) to each student.
- Explain that before any students can be considered for the new Internet Development Team, they must be as knowledgeable as possible about the browser that will be used for their market research activities.

Part 2 - Hands-On Computer Activity

5. Distribute the Step-by-Step handout (*JMOD3-1-1*) to each student while explaining the purpose of the lesson.
6. Ask the students to describe what they think an ***address*** is and to give an example if possible. Record their answers on the board.
7. Explain the naming convention of an ***URL*** (Uniform Resource Locator) using the examples from the students. Also, point out how the domain names indicate the type of entity, such as .COM is a commercial company or .GOV is a government agency, etc.
8. Instruct students to complete Exercise 1 of the handout individually and offer assistance when required.

Part 3 - Classroom Discussion

9. As students finish with Exercise 1, have them exchange descriptions with a partner to compare their answers or discuss in small groups.
10. When everyone is finished, have all the students share their descriptions and verify the accuracy of their answers.

Part 4 – Hands-on Computer Activity

11. Instruct the students now to complete Exercise 2 of their handouts.
12. Monitor each student's progress and offer assistance when necessary.
13. Retrieve the completed handouts at the end of the class session.

HOT Activities:

1. Have students research the origins of the Internet and present oral reports to the class about their findings.
2. Instruct students to choose a famous person and conduct searches on the names. For example, you might suggest a popular musician, a clothes designer, sports star, etc. (Please be sure to monitor the students' results carefully in the event that they locate any sensitive or inappropriate sites.) Emphasize that different search engines will produce different results. Have students report the number of hits, analyze the top ten sites found, and then prepare a written evaluation of the quality of content found on the three best sites from the list of ten.

Assessment methods:

- Instructor observation of each student's progress and capability to perform the basic Internet functions.
- Peer assessment of Exercise 1.
- Assessment and feedback provided by instructor of completed Exercise 2.
- Observation and evaluation by instructor of oral reports of origins of Internet.
- Assessment and feedback for written reports on top ten sites. Best sites displayed for class by instructor.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 3-1

EXERCISE 1:

Each **BUTTON** on the **Browser** is a shortcut to do something useful. List each button in your browser and then describe in your own words what each does. For example:

HOME - takes you back to the page set as the initial page

EXERCISE 2:

1. Open the browser, go to **Search** (or **Net Search**), and then to http://www.AltaVista.com or another popular search engine.

2. Do a simple search on the term music:

   - ☐ List the number of 'matches' found: ____________

   - ☐ Select a site and explore it.

   - ☐ Print out **one page only** from the site.

   - ☐ Use the **Back** button, maybe several times, and return to the home page of the search engine.

2. Perform another search on musicals:

   - ☐ List the number of 'matches' found: _____________

   - ☐ Why are there fewer 'matches'?

3. Try one of the three ways to retrieve a web site listed below:
   - Type the address (URL) into the "Address" bar. Be exact!
   - Under Favorites, highlight a site and release.
   - Press "Ctrl"+L and type the URL into the box.

   to go to the specific site for the New York Times http://www.NYTIMES.COM):

   - ☐ What is today's headline?

   - ☐ Use your browser menu or Help to Bookmark this site.

4. Quit and exit the program.

5. Turn in the completed handout along with the printout of the site you explored.

Module 3 – In Search of Market Competition
Or *Surf City, U.S.A*

IRCO Simulation:

Putting You in the Picture: As a new Production Assistant with International Recording Company (IRCO), you have an opportunity to participate in a variety of company activities. With branch offices in several cities in the US and overseas, as well as fewer than 100 employees, there is always a need for your help whether it's in Administration, Marketing, Recording, or any other of the many departments. IRCO's President, Jordan Ono, along with the talented management team of Leslie Thompson, the Vice President of Marketing; Darryl Hughes, the Administrative Assistant to the President; and Jo Santiago, the Production Manager, is always seeking ways to improve the company.

Since starting, you really haven't had any opportunities to work directly with Leslie Thompson. She is interested in using the Internet as a way to scope out IRCO's competition as well as to develop a Web site for IRCO during the next year. Word is that she will send out a company memo next week requesting employees to express their interest in these new projects and she will choose an Internet Development Team from the best responses.

You would really like the chance to join this new group at work but must figure out a clever way to get her attention. Besides learning as much as you can about the Internet and how you can relate it to IRCO's market competition, you determine that you should also identify as many examples of effective web searches and have them ready for her to review when she sends out her memo.

In Search of Market Competition
or *Surf City, U.S.A.*

LESSON 3-2: Saving and Editing Text and Images *Approx. time: 1 class*

Lesson overview:
In this lesson, students will find an article and save it in their word processor after editing.

Students will demonstrate the ability to:
1. Use an Internet browser to save and edit text and images to hard drive or floppy. (T/INT)
2. Identify general parameters of task and follow directions.(F/ANL, ES-4)
3. Gather data to identify project requirements or problem, resources and risks. (F/ANL, ES-7)
4. Communicate and document information. (F/D&BC)
5. Organize and evaluate the quality of information. (F/ANL, ES-8)

Prerequisites: Lesson 3-1

Content required:
1) How to copy text and paste into a word processor.
2) How to copy images and paste into a word processor

Resources:
The Internet for Dummies, John Levine
Reference Manuals for the browser that is being used.
Websites for a variety of different industries that may be of interest to the class

Materials checklist:
- ✓ Step-by-Step handout (*JMOD3-2-1*) which may need to be customized

Equipment checklist:
- ✓ Computer with Internet access and browser
- ✓ Printer with paper
- ✓ Computer overhead projector

Teaching strategy:
Part 1 – Introductory Discussion
1. Review the results of the searches in Lesson 3-1.
2. Explain that Internet articles can be very long -- sometimes 20 pages or more. If the information you need is only on page two, the use of copy and paste is an efficient way to print what you want. Ask the students to identify ways

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which they think they might be able to copy and paste from the Internet into the word processing program.

3. List the steps on the board as they come up with the correct ones for copying and pasting from one application to the other.

IRCO Simulation-Optional

- One of the keys to impressing Leslie for membership on the Internet Development Team will be to have an article about the music industry which was found on the web. Have students use the web sites of Billboard.com and NAMM.com in finding an article about CDs in the recording industry to complete the exercises on their handouts.

Part 2 – Hands-On Computer Activity

4. Distribute the Step-by-Step handout (*JMOD3-2-1*). Allow students to work in pairs but each student should find their own article.
5. Help the class develop or provide ahead of time a possible list of web sites that they may visit to get an article of interest.
6. Instruct the students to fill in their choices of sites under Step 3 on the handout.
7. Monitor the progress of the students and offer help when needed.
8. Depending on your computer environment, have the students save their work on a floppy disk or in a temporary directory on the hard drive.

HOT Activities:

1. Conduct a round-able discussion on the research articles found on the Internet. Ask each student to evaluate the value of the Internet source as compared to other sources (encyclopedias, newspapers, etc.) during the discussion. Include such issues as plagiarism and copyright abuse in the discussion as well as quality and timeliness of information.
2. Using the sites found in Lessons 3-1 and 3-2, have students develop a list of the top twenty sites with useful data. Rate them as 4 stars (Best), 3 stars (Great), 2 stars (Good), and 1 star (Fair).
3. Ask students to create a procedure for verifying that the information they found on the Internet is actually correct.

Assessment methods:

- Assessment by instructor of printouts turned in by all students.
- Observation by instructor of classroom participation in round-table discussion.
- Students self assess quality of sites found on Internet.
- Students conduct self-assessment by comparing their verification procedure with other students.

Instructor evaluation and comments for improvement:

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STEP-BY-STEP HANDOUT
Lesson 3-2

1. Open the word processing program and create a new file.
2. Save the new file as *NETINFO* and minimize.
3. Open the internet browser and access one of the sites listed below:
   - ____________________
   - ____________________
4. Find an article which is related to one of their interests.
5. Select the information you want to capture by clicking the mouse at the starting location, dragging to highlight the desired text, and choose **Edit**, and **Copy** from the top Menu Bar of the browser.
6. Maximize the document file in the word processor and choose **Edit** and **Paste** from its top Menu Bar.
7. Edit the article by re-phrasing or adding something to the content article.
8. Minimize the document and return to the web site article.
9. Find an image or picture that you would also like to include with your article.
10. Using the right button on the mouse, a pop-up menu will appear; let mouse up on "Copy this image". The image is copied to **Clipboard**.
11. Return to the document file (maximize it again) and place mouse where you want the image.
12. Choose **Edit** and **Paste**.
13. NOTE: If you want to save the image to your disk to use for another purpose, click and hold the right mouse button down on the image. A pop up menu will appear, let the mouse button up on "Save this image as". Then choose an appropriate name and place to save.
14. Be sure to save your document and print a copy to turn in.

In Search of Market Competition or *Surf City, U.S.A.*

LESSON 3-3: Using Basic Search Engines *Approx. time: 1 class*

Lesson overview:

During this lesson, groups of students will have an opportunity to continue to practice their search skills on the web as they prepare their set of guidelines for its use. At the end of the lesson, the entire class will vote on each set of guidelines submitted by the groups to choose the one which will become the class Internet Use Policy.

Students will demonstrate the ability to:

1. Use Internet search engines. (T/INT)
2. Make appropriate, responsible, ethical choices of what information (context and level) to pursue, use, and distribute, depending on context and audience. (F/ANL, ES-11)
3. Evaluate requirements and identify missing or conflicting information. (F/ANL, ES-6)
4. Communicate and document information. (F/D&BC)
5. Recognize the purpose of the research and evaluate its scope based on goals and available resources. (F/RES)
6. Share ideas and information in a group environment while completing task. (ES-10, ES-15)

Prerequisites: Lessons 3-1 and 3-2

Content required:

1. Guidelines from the center's Internet use policy.
2. Description of different types of available search engines, for example:
   a. Excite
   b. Altavista
   c. Yahoo
   d. Lycos
   e. Hotbot

Resources:

The Internet for Dummies, John Levine (Specifically Chapter 11)

Guidelines for Internet use of the Internet sources of your center or of some other organization:

- http://www.hbschool.com
- http://thewebtools.com/tutorial/tutorial.htm. (This location has excellent tutorials and information on how to search the Internet.)

- Do a search in Yahoo under "acceptable use Internet education" or "acceptable use Internet business" to get samples of acceptable use policies.

Materials checklist:

- ✓ Copies of Internet use guidelines for each student
- ✓ Search Results handout (*JMOD3-3-1*)

Equipment checklist:

- ✓ Computer and Internet Access for each student
- ✓ Computer display projector and whiteboard for instructor
- ✓ Copier and printer

Teaching strategy:

Part 1 – Preparatory Discussion

1. Distribute a copy of the center's guidelines to each student and allow time for the students to read the content.
2. Ask students to identify the important points of the policy and to explain why they think it was necessary to address them. Encourage discussion by asking questions such as: What rights do you have using company equipment at work? What rights does a company have? What penalties should a company have or use for abuse of Internet or equipment use, or a violation of policy? What should the policy be if there is no policy? Does no written policy mean that you can do whatever you want, whenever you want?

IRCO Simulation-Optional

- It seems like everyone at IRCO is on the Internet. What's missing is an IRCO use policy. Explain to the students that the manager, Jo Santiago, realizes this also and asks the group to recommend a one-page set of guidelines for everyone at IRCO who uses the Internet.

3. Explain the purpose of the lesson while distributing the Search Results handout (*JMOD3-3-1*) to each student.
4. Instruct the class to form groups of no more than 5 members.

Part 2 – Hands-On Computer Activity

5. Ask each group to identify as many keywords as possible to research information about Internet use policies and divide them up among the group members.
6. When finished with the keywords, send each member of the group to his/her individual stations so that different search engines may be tried, documenting results to share when they return to the group. If printing is possible, limit the number of pages or articles that each of the students is allowed to print.
7. Monitor the progress of the students and offer assistance to keep them on track.

Part 3 – Group Activity

8. As the students finish their individual searches, have them return to their groups and begin to review and compile the best parts of their data.
9. Remind the students that their Internet policy can only be one page, printed. (Specify 10-point type if required!) Also, point out that each group is responsible for preparing the typed version to turn in at the end of the session.
10. Allow time for the members of each group to share their findings and develop an original set of Internet use guidelines.
11. When all of the groups are finished, take up the printed set of guidelines and duplicate one copy of each set for each student.

Part 4 – Classroom Discussion

12. Distribute copies of all of the sets of guidelines to each student and allow time for them to read each set carefully.
13. Ask the students to analyze each set and evaluate for strengths/weaknesses and/or for missing issues not addressed and note their comments in preparation for the discussion.
14. Conduct the discussion on the merits of each set of proposed guidelines and ask the students to explain their evaluations.
15. At the end of the discussion, poll the students to determine which policy will be selected.

Assessment methods:

- Observation of group production of a set of Internet use guidelines.
- Instructor reviews and provides feedback for results of handout (*JMOD3-3-1*).
- Demonstration of proper use of Internet according to center's policy observed by instructor.
- Peer assessment of quality of results of group process.

Instructor evaluation and comments for improvement:

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Search Results
Lesson 3-3

Name______________________________ **Group:**__________

Search engine:______________________
1. KeyWord(s)______________________________
2. Site Count______________________________
3. Sites:______________________________

____

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Search engine:______________________
1. KeyWord(s)______________________________
2. Site Count______________________________
3. Sites:______________________________

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Search engine:______________________
1. KeyWord(s)______________________________
2. Site Count______________________________
3. Sites:______________________________

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Search engine:______________________
1. KeyWord(s)______________________________
2. Site Count______________________________
3. Sites:______________________________

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In Search of Market Competition
or *Surf City, U.S.A.*

LESSON 3-4: Browsers....WOWsers *Approx. time: 1 class*

Lesson overview:
With the popularity of the Web growing, the competition for the best browser is hot. In this lesson, students will fine-tune their research skills by taking a look at different browsers, describing their major features, and evaluating their benefits.

Students will demonstrate the ability to:
1. Gather data to meet project requirements. (F/RES, ES-4, ES-8, ES-13)
2. Analyze and synthesize information. (F/ANL)
3. Communicate and document information. (F/D&BC)
4. Present different search engines' specific strengths, weaknesses and special features to classmates. (T/INT, ES-7, ES-12)

Prerequisites: Lessons 3-1, 3-2, and 3-3

Content required:
1) Current marketplace and availability of web browsers
2) Feature/benefit comparisons of browsers

Resources:
For the latest in what those on the Internet think of different browsers, check out:
- http://www.yahoo.com/Computers_and_Internet/Software/Internet/World_Wide_Web/Browsers/Comparisons/
- *Netscape* has an online guide. (Very detailed)
- http://help.netscape.com/docs/client/communicator/IntroComm/Introcom.html Their FAQ (frequently asked questions) can be just the ticket for many problems
- On-line browsers manuals

Materials checklist:
✓ Transparency and handout of Browser Comparison Chart (*JMOD3-4-1*) for each student

Equipment checklist:
✓ Computers with Internet access and both Internet Explorer and Netscape Navigator loaded and accessible.
✓ Computer display projector
✓ Overhead projector

Teaching strategy:

IRCO Simulation-Optional

- Just as IRCO faces tough competition for recording artists in the music industry, explain to the students that there is constant competition in the computer industry to make a better browser.

Part 1- Preparatory Discussion

1. While distributing the handout (*JMOD3-4-1*), explain that there will be new versions of browsers released on an irregular basis for as long as anyone can foresee. The changes are usually minor, sometimes useful, often confusing, rarely explicit, often times hidden or just plain weird.
   - For each new version investigate and try out the buttons and menus. It is impossible (in any practical sense) to harm your computer in this way of experimenting. The worst might be that the program will freeze and you have to reboot.
   - The two main competitors at this point are: Netscape Navigator and Microsoft Internet Explorer. They are similar programs with a few different commands.
2. Ask student to identify criteria for comparing browsers.
3. Write their responses on the board or transparency and have them fill in their chart.
4. Ask the students to compare the features of different browsers and write these responses on the board while the students complete their chart.
5. Instruct students to explore the different browsers themselves whenever possible or direct them to the web sites with product information if not available.

Part 2 - Hands-On Computer Assignment

6. Allow enough time for students to review the features of four different browsers.
7. Encourage students to help each other find a solution when a question or problem arises and remind them to check out the on-line help.
8. Monitor their progress and provide assistance if necessary.
9. Have students turn in their charts at the end of the session.

HOT Activities:

1. Have students develop a written document with the steps one would take to explore new or different browsers and the hints for solving problems one might encounter.
2. Invite another class or group of instructors to the class and have the students teach them how to use one of the browsers.
3. Have the students make a poster highlighting the features and benefits of one of the most popular browsers.

4. Ask the students to find a recent article/critique that compares Netscape and Internet Explorer and prepare a written summary in their own words of the similarities and differences set forth by that author.

Assessment methods:

- Observation of active participation by students by the instructor.
- Review and feedback from instructor of completed comparison chart.
- Students compare and assess their charts with other students' work.
- Instructor evaluation of document on use of different browsers and feedback shared with all students.
- Self-assessment by those members of the other class who were taught by students.
- Posters assessed by students for originality and completeness of information.

Instructor evaluation and comments for improvement:

Browser Comparison Chart

Lesson 3-4

Browser #1	Browser #2	Browser #3	Browser #4	Browser #5
Name/Version:	Name/Version:	Name/Version:	Name/Version:	Name/Version:

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In Search of Market Competition
or *Surf City, U.S.A.*

LESSON 3-5: Gotta Keep Searchin', Searchin' *Approx. time: 1 class*

Lesson overview:

Students now practice techniques to refine their searches. The lesson will conclude with a search in at least three different search engines on a given topic to generate a list of 10 sites (URLs) which could be used for market research.

Students will demonstrate the ability to:

1. Evaluate requirements and identify missing or conflicting information. (F/ANL, ES-6)
2. Communicate and document information and the recommendations. (F/D&BC)
3. Recognize the purpose of the research and evaluate its scope based on goals and available resources. (F/RES, ES-8)
4. Share information and explain procedures to other classmates. (ES-7)
5. Analyze and present market information. (F/ANL, F/D&BC, ES-15)

Prerequisites: Lessons 3-1 and 3-3

Content required:

1) Different types of search engines:
   a) Category
   b) Subject
   c) Metasearch
2) Using Boolean logic

Resources:

For each search engine the **Help** pages will be very useful and up-to-date for providing information about the types of searches and the search criteria which one can employ to achieve the most efficient searches.

http://altavista.digital.com/av/content/help.htm
http://PowerReporting.com

Materials checklist:

- ✓ Lesson 3-5 IT Notes (*JMOD3-5-1)*
- ✓ Step-by-Step Handout (*JMOD3-5-2)*

Equipment checklist:

- ✓ Computer with internet connection
- ✓ Computer display projector

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Teaching strategy:

Part 1 - Introductory Discussion

1. While distributing the IT Notes (*JMOD3-5-1*), explain the purpose of this lesson and the importance of efficient Internet searches.
2. Using the handout, explain the different types of search engines and the ways in which an Internet search may be limited. Address each of the hints and have students describe how it works to achieve a better search by giving examples of its use.

IRCO Simulation- Optional

- Use these search topics for the search exercises below:
  Step 1 – hip-hop, rap, guitar
  Step 2 – Pages about last year's profits in the music business
  Pages with the name of the #1 selling artist in the URL
  Pages about music in the education domain
  Step 3 – Chosen by students
  Step 4 – CD recordings that have sold the most
  Recording artist that have sold the most
  Genres of music that have sold the most
- Conduct a discussion asking the students to consider IRCO's position in the marketplace. Find out from the students if they ran across any other companies that appeared to be doing the same things as IRCO. Have them review all of the information that was gathered and, as a class, prepare a list of possible trends developing in the music industry that would be of interest to IRCO's management. Record their ideas on the board. Finish by asking students to print the homepage of one of the companies that they think would be the strongest competitor of IRCO for their portfolios.

Part 2 – Hands-On Computer Activity

3. Distribute the Step-by-Step handout (*JMOD3-5-2*) to individual students or to students working in pairs.
4. Identify for the students or allow them to develop topics of interest for the searches in Steps 1, 2, 3 and 4.
5. Instruct them to fill in the three topics each in Steps 1, 2, 3 and 4.
6. Allow time for students to complete each or the exercises, monitor their progress and provide assistance when needed.

HOT Activities:

1. When completed with the handout, instruct students to analyze each of their ten sites for relevance, timeliness, accuracy, and completeness, and prepare a brief written description of their evaluation.
2. Have students compare and contrast the results of searches made on the same topics and prepare a short written analysis.
3. Conduct a discussion of the results of each of the exercises in the Step-by-Step handout. Ask students to evaluate their improvement in search results

and share with the other students how it was accomplished. Conclude by discussing the increased market competition provided by web sites.

Assessment methods:

- Observation by instructor of classroom activities as students participate in exercises and discussions.
- Assessment by instructor on criteria of analysis of handout and feedback given to written description.
- Students compare and assess the 10 URLs about their topics with the class.
- Self-assessment of efficient and effective search techniques by students.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 3-5

Keyword	Function
▪ **title:**text	▪ **Very useful**. Finds pages with *text* in the title of the document only. Limits hits nicely.
▪ **url:**text	▪ Finds *text* only in the URL or internet address. Very useful.
▪ **image**:filename	▪ Finds pictures of "filename"
▪ **text**:stuff	▪ Finds the word "stuff" in the body of any document
▪ **domain:**text	▪ Finds pages only in the specified domain (a subclass of the internet such as edu for education and net for internet service providers.)
▪ **host**:name	▪ Finds pages on a specific computer called "name"
▪	▪

Source: AltaVista Digital's help page. ©

☺ ***HINTS FOR A SUCCESSFUL SEARCH:***

- The problem with searching the Internet is that it contains overwhelming amounts of information, 99% of which is useless, outdated, irrelevant, or just plain wrong. Limiting the focus to laser-like accuracy will make finding what the student desires the key.
- Use several terms in one search (such as *Chopin Etudes early* will yield documents containing any of those 3 words.)
- Use "+" for terms essential to your search.
- Use "– " to exclude any term or terms from your search.
- Use **and** to join words, requiring both of them be in the document; **or** is the default mode for multiple words in searching (it will find any document which contains either word).
- Use **quotes** ("whatever") to have the search match the phrase exactly ("Early Chopin" will limit a search wonderfully. All searches are not case sensitive (capitals not needed).
- Check the Help section to identify even more ways to achieve a better search.

JMOD3-5-2

STEP-BY-STEP HANDOUT
Lesson 3-5

1. Search for the following topics and list your results of hits using three different search engines:

- ☐ Title: ____________
  - Search engine: ______________ Hits: ________
  - Search engine: ______________ Hits: ________
  - Search engine: ______________ Hits: ________
- ☐ url: ____________
  - Search engine: ______________ Hits: ________
  - Search engine: ______________ Hits: ________
  - Search engine: ______________ Hits: ________
- ☐ image: ____________
  - Search engine: ______________ Hits: ________
  - Search engine: ______________ Hits: ________
  - Search engine: ______________ Hits: ________

2. How would you make a search for:

- ☐ Topic #1: ______________________________?

  ____

  Topic #2: ______________________________?

  ____

  Topic #3: ______________________________?

  ____

3. Devise a search of your choice to see if you can get under 25 hits. List the search and its results below:

____

Search engine:__________________ Hits:________

Search engine:__________________ Hits:________

Search engine:__________________ Hits:________

4. Choose one of the topics below and then conduct a series of searches which result in 10 URL sites. Document each of these in the space provided.

- ☐ Topic #1:______________________________
- ☐ Topic #2:______________________________
- ☐ Topic #3:______________________________

A. ______________________________________

B. ______________________________________

C. ______________________________________

D. ______________________________________

E. ______________________________________

F. ______________________________________

G. ______________________________________

H. ______________________________________

I. ______________________________________

J. ______________________________________

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Module 4:
Reach Out and Touch

Module 4 – Reach Out and Touch

Learner Outcomes:

E-mail

1. Explain the components and organization of an e-mail system.
2. Use e-mail effectively and appropriately.
3. Use basic e-mail functions and tools.

Documentation and Business Communication

4. Explain the purpose and process of communication in organizations.
5. Create and present accurate and effective communication tailored to the specific purpose and needs of the audience.

Facilitation and Customer Service

6. Demonstrate personal qualities, attitudes and key skills that foster successful relationships with customers and colleagues.

Prerequisites:
Knowledge of basic computer functions, Windows, word processing, and the Internet.

Total Class Time: Approximately 10 hours

Outside readings and other resources:

Internet and World Wide Web: Simplified, Paul Whitehead, Ruth Maran
How the Internet Works: Special Edition, Preston Gralla, Mina Reimer
How the World Wide Web Works, Chris Shipley
The Virtual Community: Homesteading on the Electronic Frontier, Howard Rheingold
The Whole Internet for Windows 95; User's Guide & Catalog, Ed Krol, Paula Ferguson
Technology and Privacy: The New Landscape, Philip Agre
E-Policy: How to Develop Computer, E-mail, and Internet Guidelines to Protect Your Company and Its Assets, Michael Everly

Module 4 – Reach Out and Touch

The most popular use of the Internet has to be for electronic mail or e-mail, as it generally is known. Even movies have been made about this unique form of communication.

E-mail gives you the ability to send written messages around the world, to any other e-mail user, simply by using a telephone/modem and other telecommunications lines. For many, this is an opportunity to communicate with relatives or friends without long-distance telephone charges or postal service delays. It's also a convenient way when traveling overseas to stay in touch with everyone at home.

During this module, we will explore the various features of e-mail software along with the different types of messages that are sent via e-mail. We will also consider the issue of what is appropriate content to be included in any e-mail transmission. At the same time, you will get to compose and send some interesting messages of your own.

For your portfolio, you will produce:

1. Examples of good e-mail correspondence
2. Analysis of e-mail usage policies

Lesson Titles:

- 4-1 Just Saying Hello
- 4-2 Get to the Point!
- 4-3 What's Inside That?
- 4-4 Netiquette
- 4-5 Yea, but is it LEGAL?

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Reach Out and Touch

LESSON 4-1: Just Saying Hello *Approx. time: 1 class*

Lesson overview:

In this first lesson, students will practice addressing, sending, receiving and replying to e-mail.

Students will demonstrate the ability to:

1. Explain the purpose and basic features of e-mail systems. (T/EM)
2. Send, receive, reply, forward, save, and delete messages. (T/EM)
3. Develop a folder for saved messages and documents, and organize messages. (T/EM, ES-4)
4. Communicate clearly and concisely in a business-like manner. (F/D&BC, ES-4, ES-6)

Prerequisites: Modules 1, 2, and 3

Content required:

1) Purpose of e-mail
2) Password development
3) Basic commands and uses

Resources:

Microsoft Outlook '97 Field Guide and *Outlook '97 At A Glance*, both by
S.L.Nelson, Microsoft Press
http://www.microsoft.com/products/prodref/608_ov.htm

Materials checklist:

- ✓ Handout of Module Overview (*JMOD4-Ovr*) for each student
- ✓ Transparency and/or handouts of IT Notes (*JMOD4-1-1*)
- ✓ The appropriate software **must** be installed and tested well in advance.
- ✓ An external e-mail address available for receiving e-mails from the class.
- ✓ Sample of IRCO Simulation handout (*JMOD4-1-2*)

Equipment checklist:

- ✓ Computer with Internet connection
- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the Overview (*JMOD4-Ovr*) and IT Notes handouts (*JMOD4-1-1*), giving the students time to review each of the materials.

2. Introduce the topic of e-mail with a short discussion focused around the purpose of e-mail and the privacy issues outlined in the IT Notes, using these or similar questions:
   - *What does the term e-mail mean? (electronic mail)
   - *What is its purpose? (Quick, effective, focused communication)
   - *How does it work? (A computer with an e-mail software program, a browser and an Internet connection is able to communicate with any other computer that has e-mail capacity, a browser, and an Internet connection.)
   - *Why do you think privacy involving e-mail could be a problem/issue? (See IT Notes for this explanation.)
3. Instruct students to develop their login name and password, using the information in the CONTENT section. ***Verify that each student has accomplished this first step before they use the computer.***
4. Share the external e-mail addresses of the class, which they will use for this exercise, by listing them on the board.

Part 2 – Hands-On Computer Activity

5. Have students locate and open the e-mail software program and look for a message. Consider using a free e-mail service such as Hotmail, Yahoo, or Mailexcite at your site. This way students can also keep in contact with family, friends, for job interviews, etc. and so that the center can use as a follow-up method after the students leave.
6. Since there are no messages, instruct them to compose a simple hello and greeting to the student on their right, and mail it to them, using the correct icon for SEND.
7. Show students how to create and label a folder (using their own name), after questioning them about the purpose of folders. Then show them how to save their message in the folder just created.
8. Instruct students to reply to their message with another simple, but business-like message.

IRCO Simulation-Optional

- Distribute the IRCO Simulation Handout (*JMOD4-1-2*) and explain to the students their roles as Production Assistants for IRCO
- Instruct the students to send an e-mail to a brand new employee at IRCO (the student on their left) as they assume the identity of IRCO employees and then reply to the message that they receive.
- Have the students then create a second folder labeled IRCO for saving these messages.

HOT Activities:

1. Have students pretend they have daily access to e-mail capability. List 5-10 ways they could utilize this in their daily lives: for fun, friendship, school and/or family purposes. Share list with classmates as part of class discussion.

2. Ask students to discuss how e-mail can benefit or hurt a business. As they identify ways, list these on the board. Next ask the students to identify ways that e-mail can be a help or a hindrance to people at their job. Again, list these ideas on the board. Conclude by pointing out that, by the end of this module, students should have a very good idea as to what is professionally acceptable.
3. Prepare and send an e-mail message to each student. Instruct each student to work individually or with a partner to:
    - Locate and open the e-mail software.
    - Locate the IN-BOX, and open/read their message.
    - Respond to the sender's question with an appropriate reply, print this message (to be handed in for evaluation purposes), and send it.
    - Forward their response to a second e-mail address provided by the instructor.
    - File the email in the folder with their name on it.
4. After the class has completed the above exercise, ask for class participation in a discussion about the parts of e-mail that are relatively easy to understand and why, and the parts that are more difficult (and need a bit more thought) and why that is. Encourage and support students in being honest in their appraisal of what is easy and what is more difficult.
5. Consider the establishment of a discussion group of Job Corps students involved in the other IT pilots so that they can send each other e-mail messages, work on projects together, etc.

Assessment methods:

- An activity identical (with a different e-mail reply-to-person) to the above can be designed, having each student work by him/her self to demonstrate mastery.
- A follow-up piece to this assessment could include a short exercise that asks students to explain in 1-2 sentences, in their own words, how to:
    - ➢ Locate e-mail software programs on the computer
    - ➢ Open e-mail software
    - ➢ Open, reply to, forward, save and delete messages

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 4-1

WARNING: Never give your home phone or address to anyone on the Internet. DO NOT "CHAT" unless you have permission from the teacher directly.

E-mail is a delightfully handy way to keep in touch with people all over the world without long-distance phone charges. Keep in mind that e-mail is very public, even if it appears to be private. E-mail is often stored on a central computer or server, and even if you delete a message it may still be on the server! Messages are very quickly sent to the wrong recipient and can be intercepted. E-mail done on a center's or company's computer are considered property of that organization and may be read, printed, made public, or used as evidence in court.

Communicate sensitive and confidential matters in person. Always assume that whatever you e-mail could be posted for everyone to read. Be discreet and cautious.

The simplest e-mail commands are also the ones you will use most often, i.e. **open** messages, **reply**, **forward**, **save** and **close.** Every e-mail software program offers these commands, but every program will name them slightly differently, (i.e. VIEW or OPEN as the command for seeing and being able to read a message). When using a new e-mail system, use your common sense and you will probably be able to quickly figure out which command to use for what you want to accomplish. Remember, the User Manual and the on-line Help that comes with most e-mail programs will give you valuable information about using the commands.

- To open your software and read your messages you need a name, or log in name, and a password. If the account is already set up, use the password to open the mail. To create a log in name, people often use their first initial and last name (James Noble would become jnoble). Use all lower case, although most software ignores upper case. If that fails, always try twice and check the spelling; it must be exact.

Passwords: Use a simple password because you do not want to forget it. Your name or your number on the class roster is good. To create a truly secure password for yourself, do not use your initials, center name, license plate, return address, or such similar obvious choices. Students or others will crack your password and create incredible problems.

- Use the following guide to create a secure password:
  - Write down the password first. Hide it!!
  - Use letters and numbers and other odd characters (e.g. *&^#@).
  - Use something only you know and will remember (a friend's name, altered, like jame23@s is excellent).

- Open messages by selecting the correct command. (For example, in Outlook, "Go" down to "Inbox" release)

- To reply, select "Reply" (or Reply to Author). This sends a message to whoever sent that e-mail. Be aware that if the message was from an automatic list the reply function might not send a message to the originator but to everybody on the list. Be careful of what you say and to where you send it!

- To forward, choose that button. Type in the name and address of the recipient(s) in the correct field or line. It is considered polite to not include the original message unless it is essential to preserve context or meaning.

- To save, select Edit, "Move to folder" and choose the appropriate folder.

You want to have several folders for mail which logically organize them into useful categories. Typical folders might include Personal, Clients, Jobs, SaveMe, Technical info, or specific names like Arnold Jones and Laura Moon. Even moderate e-mail users will accumulate dozens of messages; folders help keep information accessible and organized.

Module 4 – Reach Out and Touch

IRCO Simulation:

Putting You in the Picture: As a new Production Assistant with International Recording Company (IRCO), you have an opportunity to participate in a variety of company activities. With branch offices in several cities in the US and overseas, as well as fewer than 100 employees, there is always a need for your help whether it's in Administration, Marketing, Recording, or any other of the many departments. IRCO's President, Jordan Ono, along with the talented management team of Leslie Thompson, the Vice President of Marketing; Darryl Hughes, the Administrative Assistant to the President; and Jo Santiago, the Production Manager, is always seeking ways to improve the company.

What a busy place IRCO is. You probably would never imagine that a recording company is filled with hustling employees and, sometimes, even customers. One of the best ways that we can all keep up with each other is to use e-mail. Since you are familiar with word processing and the Internet, becoming an expert at e-mailing should take only a short time.

LESSON 4-2: Get to the Point! Good E-mail Messages *Approx. time: 1 class*

Lesson overview:
Students will write, send, and print concise e-mail messages within established guidelines in this lesson.

Students will demonstrate the ability to:
1. Use e-mail appropriately according to organization guidelines. (T/EM)
2. Access and use information from manuals and computers. (ES-13)
3. Print messages, documents and files. (T/EM)
4. Display attitudes that foster effective communication. (F/D&BC)
5. Evaluate and effectively use various communication techniques and formats. (F/D&BC)

Prerequisites: Lesson 4-1

Content required:
1) Writing essentials in the style appropriate to a newspaper
2) Priority levels (Optional)
3) Use of the print button or select **Edit**, then print.

Resources:
Web sites for industries in which the students are interested. For example, many trade organizations have a web site for members and potential members as well as specific corporations maintain web sites to lure potential employees. Also, consider the IT students at other pilot sites as resources.

Materials checklist:
- ✓ Internet address to which the material may be e-mailed
- ✓ Sample of IRCO Simulation of Announcement by Jordan (*JMOD4-2-1*) as handout or transparency
- ✓ E-mail Assignment: Assessment Checklist (*JMOD4-2-2*) for each student

Equipment checklist:
- ✓ Computer with Internet and e-mail access

Teaching strategy:

Part 1 – Introduction
1. While introducing the lesson, have students use the Internet to find a favorite web site and note the webmaster's e-mail address.

IRCO Simulation-Optional

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- Distribute the Announcement from Jordan (*JMOD4-2-1*) and explain to the students that they are in the role of a Production Assistant, currently working in the Marketing Department of IRCO. Their task is to compose an e-mail request to the editor of their local newspaper to release the story of IRCO's nomination for the prestigious BEST CD PRODUCER Award.
- Provide the students with a temporary e-mail account address for the Announcements Editor at the local newspaper (only for portfolio assessment purposes).
- Using their word processor while off line, instruct students to prepare a brief introduction to their Press Release that contains a request for newspaper coverage of their story that follows. Students are then to write 2 or 3 paragraphs, summarizing the announcement by Jordan that will be e-mailed to the Announcements Editor. Be sure to have students include the five news story guidelines: Who, What, When, Why, Where, and any major events in their message. Encourage some humor or other ways to make the story an interesting piece.
- Have the students copy and paste their document into an e-mail message during Step 4 below.

Part 2 - Hands-On Computer Activity

1. Instruct students to open the e-mail software and under "Compose" select a new message.
2. Have students key in their selected e-mail address and check the spelling carefully. Remind them of the importance of correct spelling and use of Spell-Check, if that is an option within their e-mail program.
3. Discuss style: Tailoring the message format to suit the intended audience, be it business-like, informal, or "finding-a-job-formal"!
4. Ask students to write a message to the webmaster of the site that they found of interest. Instruct the students also to copy their instructor before sending the message. Remind students to introduce themselves during the message and to identify as many points about the quality of the site as they can (without going overboard).
5. Have students make this "Important" but not urgent among their priorities.
6. Request that students print out their e-mail correspondence, and then collect them for assessment purposes.

HOT Activities:.

1. Have students make their own electronic edition of a newspaper and publish it for the entire center. Encourage them to cover topics about the center as well as about the community. Students could e-mail their "who, what, when, and where" news stories to Job Corps students at other IT pilot sites. (Please be sure to get students' approval before releasing any e-mail addresses.)
2. Using the E-mail Assignment Handout (*JMOD4-2-2*), have students evaluate their e-mail messages and practice improving the composition skills. For more practice, have students evaluate a partner's e-mail message and provide him/her with feedback.

Assessment methods:

Use the E-Mail Assignment Handout (*JMOD4-2-2*) to grade the printed message for:

- Conciseness
- Correct grammar and complete, intelligent, interesting sentences
- Spelling accuracy
- Completeness of message

Instructor evaluation and comments for improvement:

International Recording Company

Memo

To: Marketing Department

From: Jordan

Date: November 1, 2000

Re: Announcement from the MRAA

I have just received information from Erin Atkinson, Executive Director of the Music Recording Association of America (MRAA), that we have been nominated for the award of Best CD Producer. IRCO is one of five finalists for the honor that will be awarded at the annual MRAA convention next March.

Established in 1889, the MRAA is the oldest professional organization to promote musician performances worldwide. Each year during their annual convention for members they host a gala awards dinner that is televised to an audience estimated at over 100 million. Twenty different awards, all denoting outstanding accomplishments in the music industry in a variety of categories, are presented by celebrities throughout an evening of musical entertainment. This year's event will occur at the new Benaroya Symphony Hall in Seattle.

The other companies nominated are Sony, Arista, Atlantic, and Capitol. I am truly excited to be considered in a category like this among such industry giants.

I have asked Leslie to start disseminating the word to the rest of our employees throughout our different locations and to the media. We will also want to let our customers know of this achievement.

As further developments become available, I will share them with you.

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E-MAIL ASSIGNMENT:
ASSESSMENT CHECKLIST

Student:__________________________

1.	Correct e-mail address and set-up of document to be created:		10pts
2.	Sentences: Short, simple, easy to understand, and concise:		15pts
3.	Designation and use of correct priority level		5pts
4.	Correct grammar, sentence structure and spelling		20pts
5.	Content:	Clear message, expressed succinctly	10pts
		2-3 well-constructed paragraphs	10pts
		Humor or interest-producing thoughts	10pts
		Appropriate tone and language for business	10pts
		Courteous and engaging style	10pts
		Total	100pts

LESSON 4-3: What's Inside That? *Approx. time: 1 class*

Lesson overview:
Students will make a list of e-mail addresses and practice attaching documents to an e-mail message and opening received attachments.

Students will demonstrate the ability to:

1. Attach documents to messages. (T/EM)
2. Create distribution lists. (T/EM)
3. Develop a document with appropriate language, style, and format based on the needs of the task and audience. (F/D&BC)
4. Share information and explain procedures to group members. (ES-7)
5. Work effectively in a group. (ES-10, ES-11)
6. Analyze/interpret and synthesize/summarize information. (F/ANL)

Prerequisites: Lessons 4-1 and 4-2

Content required:

1) Definition of an address book:
   a) How to create an address book
   b) Typical groups might include Friends, Classmates, Business Contacts or Relatives.
2) Attaching a document or file
3) Viewing a file

Resources:
The "Help" file in Microsoft *Outlook.*
Microsoft Outlook '98 Field Guide and Outlook '2000 At A Glance, both by S. L. Nelson, Microsoft Press
http://www.microsoft.com/products/prodref/608_ov.htm

Materials checklist:

✓ Sample of IRCO Simulation handout with e-mail addresses (*JMOD4-3-1)* with e-mail commands which may need to be customized, based on e-mail software

Equipment checklist:

✓ Computer with Internet access

Teaching strategy:

1. Explain to students that the purpose of today's lesson is to prepare a questionnaire (6+ questions) that will become a document they are sending to a group of selected e-mail users. Continue to describe the activity by

explaining that, within a group, they need to brainstorm questions for the content and then produce a written document with the list of the questions.

2. Conduct the above brainstorming activity and have student groups complete the design of their questionnaires.
3. Provide time for each student to prepare his or her own copy of the questionnaire in the word processing application being used.

IRCO Simulation

- Explain to students that the class is going to assume the roles of Production Assistants at IRCO and develop a questionnaire (6+ questions) that will become a document they are sending to selected IRCO employees. Continue to describe the activity by explaining that they need to brainstorm questions about musical groups (such as, what musical types other people prefer, how many hours a day they listen to music, what musical groups are their favorites and why, etc.), and then produce a written document with the list of the questions.
- Distribute the handout with the e-mail instructions and the list of IRCO employees (*JMOD4-3-1*) to each student.

HOT Activities:

1. Instruct students to open a new e-mail message, and then compose a short introductory message alerting their audience that they will be receiving (attached to this e-mail) a short questionnaire. The communication should request them to complete the questionnaire and return e-mail it to them as soon as possible.
2. Ask students to attach the questionnaire to their e-mail message using the directions by demonstrating the process, but instruct them not to send the message, as they need to create a group of e-mail addresses that will receive this message and attachment. Have students develop a list of names with e-mail address or provide them one (such as one from the center).
3. Have the students create an e-mail group called Question Feedback and then enter their names and the e-mail into this group.
4. Show students how to select the group and send the message and then give them time to perform the process on their own.

Assessment methods:

- Instructor prepares examples of feedback for each of the students' surveys to which they can develop replies. Evaluation by the instructor of the questionnaires and replies.

Instructor evaluation and comments for improvement:

IRCO Simulation
Employee List
Lesson 4-3

1. Joyce Adams	jadams@irco.com
2. Joe Santos	jsantos@irco.com
3. Will Authonski	wauthon@irco.com
4. Alicia Romano	aroman@irco.com
5. R. J. Gonzales	rjgonz@irco.com
6. Terry Eubol	teubol@irco.com
7. Tim Grather	tgrather@irco.com
8. Cindy Lee	clee@irco.com
9. Jim Wu	jwu@irco.com
10. Linda Yantis	lyantis@irco.com

LESSON 4-4: "Netiquette"- Internet Etiquette *Approx. time: 1 class*

Lesson overview:
Students will review examples of e-mail and learn how to make productive, business-focused messages. They then will write their own e-mails with correct grammar, tone, formatting, and style.

Students will demonstrate the ability to:
1. Explain and use appropriate e-mail etiquette. (T/EM)
2. Be courteous and professional when communicating with others. (F/D&BC, ES-7)
3. Explain the importance of customer service in organizations. (F/F&CS, ES-9)
4. Identify and exhibit the qualities and attitudes that foster successful relationships with customers. (F/F&CS, ES-9, ES-12)

Prerequisites: Lessons 4-1, 4-2, and 4-3

Content required:
1) Techniques for proper e-mail in business
2) Definition of flaming
3) Customer Service guidelines

Resources:
The Internet has many places to read about current e-mail rules and procedures. For example:
http://www.fhcrc.org/about/CenterNews/1996/Dec19/Emailettiquette.htm and
http://cc.uoregon.edu/etiquette.html

Materials checklist:
- ✓ Handout of information if text or other resources not available (*JMOD4-4-1*)
- ✓ Handout or transparency of examples of good and bad e-mail (*JMOD4-4-2*)
- ✓ IRCO Simulation of Situations for Group Activity (*JMOD4-4-3*)
- ✓ Handout of critique sheet for e-mail correspondence (*JMOD4-4-4*)

Equipment checklist:
- ✓ Computer (internet access optional)
- ✓ Overhead or computer display projector

Teaching strategy:
Part 1 – Before Class Preparation for Instructor
1. Review the types of situations found in the IRCO Simulation handout (*JMOD4-4-3*).

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2. Develop a list of scenarios that would provide opportunities for the students to 'flex their customer service muscles'. For example, you may address actual occurrences around the center or types of situations that they may face in a particular industry. Use this list during Step 1 of the Hot Activities.

Part 2 – Classroom Discussion

3. Distribute the informational handout (*JMOD4-4-1*) while explaining the purpose of the lesson and allow enough time for the students to review and consider the content.
4. Conduct a general class discussion surrounding the topics regarding e-mail etiquette and customer service.
5. Using the samples of good and bad e-mail correspondence (*JMOD4-4-2*), address each example. Probe the students to give ideas as to why they are good or bad and how the messages could be improved.

IRCO Simulation-Optional

- Distribute the list of situations that might be found in IRCO (*JMOD4-4-3*) to use in Step 1 of the Hot Activities.

HOT Activities:

1. Have students work in teams of two for the following problem-solving activity. Assign each team one of the "situations" from the list provided. As a team, they are to compose a bad example of an e-mail response to the situation, and a good example for the same situation.
2. Instruct students to send these two examples to the instructor and be prepared to explain to their classmates the specific parts of each e-mail that are either bad or good.
3. Use the overhead projection device to show a sampling of these good and bad e-mails, asking their "authors" to assist in pointing out their flaws and strong points.
4. Locate a student or instructor with a real customer complaint. Document all of the e-mail and other communications which take place. Have students assess when the communication began to resolve the problem and recommend how the process could have been shortened or done better and more efficiently.

Assessment methods:

- Make copies for each student of two particularly strong examples of both good and bad e-mail etiquette and customer service. Students generate a list of characteristics that differentiates the examples for instructor evaluation.
- Assign students, during the first 20 minutes of the next class period, to critique each example, using the E-Mail Etiquette and Customer Service Critique Sheet (*JMOD4-4-4*) as a guide, and hand in for assessment by instructor.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 4-4

It's a Good Thing

Treating others with dignity and respect is expected whether you are talking to someone in person or communicating by e-mail. This simple rule tends to be violated more in cyberspace because of the seeming anonymity of electronic interaction. E-mail messages can be traced, usually very easily, and if originating from a large organization, have left a copy behind on the server. If you send a nasty e-mail to someone, they will know who it came from, so be prepared to deal with the consequences.

Writing good e-mail is analogous to writing a good postcard. It is meant for one individual but can be seen by many others, so it must be kept clean and concise. Start with a subject line that communicates the subject quickly. You want to keep it short and to the point. Include your return e-mail address. **Minors should never give out their home address or phone number to anyone on the Internet!** Do not use all capital letters; it is the electronic equivalent of shouting, which is very bad manners - and hard to read. As you receive e-mail it is polite to reply in a timely fashion. Finally, respect the copyright law: do not steal pictures, text, or software. It is a federal offense.

"Flaming" is the sending of a particularly nasty e-mail. Do not flame others. It is rude and does not solve anything. If a message or bit of information upsets you, then you should:

- Verify the information and its source.
- Deal with personal and sensitive issues in person, not e-mail or voice-mail.
- Wait 24 hours before sending any e-mail that has an acrimonious content. Cool down!
- Be clear about your goal. Is it to solve the problem, or just to lash out and hurt someone?
- Everyone likes to be valued, praised and feel productive. Look for the good in the midst of any negative.
- Treat others as you would wish to be treated!

More on Customer Service

When employed where you deal with customers, over the phone, or with e-mail, there are additional customer service guidelines to observe:

1. Treat customers with politeness, no matter what they say.
2. Attempt to handle whatever issue or complaint the customer has. Try not to pass them off onto someone else and avoid "get back to you tomorrow". Deal with the problem quickly, honestly and with good manners.
3. The main contact the customer has is with you, so make it great.

A short note about phone manners:

- Speak clearly, and enunciate without slang.
- Answer the phone saying, "Hello, {company name} this is {your name}, how may I help you?" **not** "yea?" or "huh?" or "*can* I help you?" They would not be calling if they didn't want something.
- **Ask** if they would mind being put on hold and wait for an affirmative.
- Repeat back important messages and phone numbers to ensure correctness.

E-MAIL SAMPLES
Good and Bad

1. **Subject**: D

Message: What a jerk he is!!!!!!!HENEVRELISTENSWHYCANTHESHUTUP!!!

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2. **Subject: The timely importing of the automobiles from China and the other Pacific Rim Countries for the last several years into American ports like Seattle and Los Angeles, and the strike.**

Message: Workers at **General Motors'** only U.S. plant are still turning out cars—the Saturn division, where the company boasts of harmonious labor-management relations—voted overwhelmingly to authorize a strike. "We can't continue to live a lie that this partnership is alive and healthy and well when it's not," said Mike Bennett, bargaining chairman for the union local at Saturn.

The strike-authorization vote Sunday was another blow to the strike-crippled automaker. Negotiations have slowed and the United Auto Workers Union today convened a summit of about 300 local union officials in Flint, Mich. Talks between the union and the company also resumed today in Michigan.

Amid chants of "No justice, no peace," the local presidents and bargaining committee chairmen gathered in a suburban hotel ballroom not far from the Flint Metal Center stamping plant where the first strike began June 5.

The meeting came one day after UAW members in Spring Hill, Tenn., voted to authorize what would be the first strike ever at GM's Saturn subsidiary.

Bennett, who was attending the UAW conference, noted that negotiations at the plant were scheduled to resume Tuesday. He said he doubted a strike would be called there within the next 30 days.

Saturn promotes itself as "a different kind of car company." It uses a team approach in the factory and has a reputation for strong management-employee relations.

Of the more than 5,000 Saturn workers who voted, 96 percent cast ballots for strike authorization.

Authorizations Used as Bargaining Tool

The UAW often authorizes strikes to put pressure on management during negotiations. The union has obtained authorizations in recent months to call strikes at an assembly plant in Flint and three parts plants in Dayton, Ohio, and Indianapolis but has yet to order walkouts there.

Saturn President Don Hudler played down the vote, saying it does not indicate a strike is imminent. He said Saturn will maintain its operating schedule and continue turning out cars.

"We recognize we have critical issues to work through," Hudler said in a statement. "We will continue to talk through each one of them and resolve issues as we've always done in the past—in the spirit of partnership."

The vote came four months after dissident employees forced a referendum on their unique contract with GM. Workers voted overwhelmingly to keep the "risk-and-reward" contract rather than abandon it for the contract all other UAW workers have.

Under the "risk-and-reward" pay program, Saturn employees average about 12 percent less in salary than GM's other workers but can add to their base pay by hitting certain goals.

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3. **Subject: ITBS Tests**

Message: The ITBS tests will be given Thursday and Friday.
All students should report to the auditorium at 10am.
If there are any questions ask bjones@hallhigh.edu or call 402-EDUC
Thank you, Mr. Jones

"IRCO SITUATIONS" for Group Activity
Lesson 4-4

1. Send a message calling for a meeting of the Marketing Department at IRCO.
2. Send a message to a group of IRCO venders announcing the MRAA nomination.
3. Send a message to the company president requesting that a Friday afternoon staff get-together be held monthly, on the last Friday of the month, to acknowledge all the employees who had birthdays that month.
4. Reply to a message from your manager, who is alerting you to the possibility that you may lose your staff parking place if you continue to arrive late to staff meetings.
5. Reply to a message from your manager in which you were asked to attend a company picnic on a date when you have an important family commitment.
6. Reply to a very upset customer who bought one of your company's CDs a year ago and now wants to return it to the store where he/she purchased it because his/her taste in music has changed.
7. Send a message announcing that Joanna Bradwell, Assistant Director of Marketing at IRCO, gave birth to a baby girl yesterday.
8. Send a message to announce the retirement of Joe Antoni, Manager of Research and Development, and a party to be held in his honor.
9. Reply to a message sent to all IRCO employees, by Jordan Ono, stating that employees needing to take summer vacations should notify their immediate supervisor with those dates as soon as possible.
10. Send a message congratulating Joan Buto as "employee of the month".
11. Send a message to your immediate supervisor letting her know that you will need to take a personal leave day this coming Friday for a court appearance.
12. Send a message to your immediate supervisor asking for assistance in mediating a disagreement between two of your colleagues.

E-MAIL ETIQUETTE & CUSTOMER SERVICE CRITIQUE SHEET

Lesson 4-4

Name:______________________________________Date:___________

1. Was the responder treated with dignity and respect?
2. Was the message clear and concise and easy to understand?
3. Was the subject communicated at the beginning, and quickly?
4. Were upper and lower case letters used appropriately?
5. Did anything stated violate a copyright law?
6. Was the tone polite, positive and upbeat, so that the person receiving it felt valued?
7. Was the subject too sensitive for e-mail purposes and therefore should have been dealt with person-to-person?
8. Is the goal of the e-mail clear?
9. Was the problem dealt with quickly, honestly and with good manners?

LESSON 4-5: Yea, but is it LEGAL? *Approx. time: 1 class*

Lesson overview:
Students will have an opportunity to analyze legal-use policies and summarize them to members of a different team for centers and businesses.

Students will demonstrate the ability to:

1. Explain security issues and the purpose of guidelines for legal usage of e-mail. (T/EM, ES-16)
2. Use effective listening and paraphrasing skills in a group environment. (F/D&BC, ES-5, ES-7)
3. Analyze information and present in a written or oral summary. (F/D&BC)

Prerequisites: Lessons 4-1 and 4-4

Content required:

1) Basic information on Internet policies
2) Sample of center's guidelines/policy

Resources:
www.icle.org/techlink/internet/how.htm
www.icle.org/techlink/internet/email.htm

Materials checklist:

- ✓ Handout and transparency of information such as IT Notes(*JMOD4-5-1*) with copy of the center's e-mail usage policy for each student
- ✓ Sample of school policy (*JMOD4-5-2*)

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 - Preparatory Activity

1. Distribute the handout with the information (*JMOD4-5-1*) and sample of an e-mail usage policy.
2. Divide the text sections of the policy into smaller 'chunks' and assign each to a team of students for review.
3. After determining an adequate time limit for completion, ask students to summarize in their own words within the time limit and be prepared to present an oral summation to the class.

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Part 2 – Group Activity and Discussion

4. While each team prepares their oral summation to the class, ask them to choose a key topic word that could be a good, concise title for their "chunk" (i.e. one paragraph-chunk might address the concept of privacy).
5. As each team presents, put a key word/s on the board or overhead. After the oral summation and discussion-for-clarification is completed, the class will have a list of 12-15 key words that should spark recognition of the concept.
6. Select key parts of the e-mail policy you have just "dissected" with the class, and conduct a discussion centering on why a policy like this is needed.
7. Assign a writing assignment, asking each student to defend the policy by reacting to the following statement:

"All e-mail policies are just an attempt to take away my First Amendment right of free speech."

HOT Activities:

1. Working in their same team, assign the task of obtaining a copy of the e-mail policy for a fairly large business in your area. Ask each team to compare and contrast (i.e. analyze) their business e-mail policy with the one for their center. *Instructor's Note: For this activity, you may want to model the idea of comparing and contrasting. To do this, you will need to obtain an e-mail policy of a business (different from any of the ones the students procured) and, utilizing the key words generated in #2 above in the Teaching Strategy section, list the similarities and differences that occur within the business e-mail policy. Then, taking this list under one of the key words, write a short paragraph presenting this analysis.*
2. Have each student team briefly present their analysis to their classmates. After these presentations, conduct a discussion about the key differences between an e-mail policy governing an educational center and one governing a group of adult business colleagues.
3. After the above discussion, ask students to role-play a discussion between a student and her/his parent, where the student is attempting to explain to the parent why there are inherent differences between the two types of policies.

Assessment methods:

- Have the students use each word from the paragraph-chunk titles to summarize the ideas in a hand-written or word processing format. The written summary of the key word topics done by each student will serve as an excellent barometer of their understanding. As each e-mail policy will differ, it is not possible to attach a list of criteria for evaluating their mastery of each concept—this will be left to the instructor.
- Students compare and contrast the policies generated. Student teams can then combine the "best policies" into a few documents.

Instructor evaluation and comments for improvement:

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JMOD4-5-1

IT NOTES
Lesson 4-5

The use of e-mail is increasing at a fantastic rate. There are guidelines for all users as well as specific restrictions which educational institutions and corporations impose on their authorized users. As the computers, software, and customs change, so also do usage policies, although some guidelines will remain constant. Some activities are **not** allowed and never will be:

- Using the educational institution or business e-mail to make money for oneself.
- Copyright infringement (taking of pictures, text or anything else illegally).
- Illegal or immoral pursuits.
- Sending so many unnecessary or illegitimate messages to others that the system is slowed down.

Many e-mail usage policies specifically allow individuals to use e-mail for personal messages. It can promote learning about the computer system, build team spirit, and increase overall productivity. E-mail usage policy is similar to the one that many companies have about using the telephone; a little personal use is fine as long as work gets done in a timely manner. Tying up company resources for extended periods of time or in a costly manner is not allowed.

Privacy of e-mail is an evolving issue that involves legal and social questions. Current opinions vary, yet there is general agreement that companies own any e-mail which comes into or leaves their network. A significant percentage of companies, especially large companies, read all of the e-mail that goes through their system.

Messages of a personal or confidential nature need to be treated carefully. Some communications should only be done in person, others can be dealt with by e-mail using indirect terms. When sending sensitive material, be sure the address is correct! You should operate under the thought that any e-mail you send may be posted on a public bulletin board as soon as it is sent, so be careful.

EXAMPLE OF E-MAIL USAGE POLICY
Seattle School District
Network Use/Access Agreement

The Seattle School District is pleased to offer its employees access to the District's computer network, which includes word processing, electronic mail, and Internet services. The District's network should be used primarily for work-related and educational purposes. All information and services contained on District computers are placed there solely for job-related functions. Access to the network is a privilege - not a right - and it may be revoked by the District at any time.

The District has the right to review any material stored in a District computer or accessed through the network. The District also has the right to edit or remove any materials installed, used, stored, or distributed on or through the District's network or system. Files stored or materials accessed through the network are not private.

The District does not warrant the functions of the Internet service or that any of the networks accessible through the Internet service will meet any specific requirements an employee may have, or that the Internet service will be error-free or uninterrupted. Nor shall the District or any administrators be liable for any direct or indirect, incidental, or consequential damages sustained or incurred in connection with the use, operation, or inability to use the network.

The following conduct is prohibited on the District network:

1. Transmitting or accessing obscene, pornographic, graphically violent, or sexually inappropriate material or pictures for a non-educational purpose;
2. Using obscene, graphically violent, or sexually inappropriate language for a non-educational purpose;
3. Engaging in practices that may harm or destroy data on any system or on the network or disrupt the operation of the network;
4. Installing, storing or distributing copyrighted software or materials in violation of copyright law;
5. Supporting or opposing a political candidate, an election campaign, or ballot proposition, including a school levy;
6. Unauthorized use of another person's password;
7. Transmitting or accessing material that discriminates against, harasses, defames, or insults another person, which includes sending or receiving sexually explicit, racial, or gender inappropriate jokes or messages;
8. Using the network to violate District policies;
9. Encrypting communications to avoid District review;
10. Intentional and unauthorized access in another person's folders or work files;
11. Using the network for illegal activities (e.g. drugs, bomb-making or computer "hacking").

The above list is not exclusive and the District is the sole arbiter of what conduct is inappropriate and thus prohibited on the network. A network administrator will report inappropriate conduct to an employee's supervisor and to human resources so that appropriate disciplinary action may be taken. Any other reports of inappropriate behavior, violations, or complaints will be routed to the employee's supervisor or to human resources so that appropriate disciplinary action may be taken. Engaging in prohibited or inappropriate conduct may result in the loss of access to the network, as well as other disciplinary action up to and including termination of employment. When applicable, law enforcement agencies may be involved.

In consideration for the privilege of using the District's network or other computer services, I grant the District permission to monitor my activities on the network and I hereby waive any right to privacy which I may otherwise have in such materials. I have read and understand the above Network Use/Access Agreement. I acknowledge and agree to all the conditions set forth in this document.

Print Name ______________________ Signature ______________________

Location /Position ______________________ Date ______________________

Module 5:
Creating Budgets, Budgets and More Budgets

Module 5 – Creating Budgets, Budgets, and More Budgets

Learner Outcomes:

Spreadsheet

1. Design, create, modify, and troubleshoot spreadsheets.
2. Create graphs and charts.
3. Apply spreadsheet principles to real-life and business situations.
4. Apply math and logical thinking and analysis in designing spreadsheets.

Analysis

5. Gather data to identify requirements and to interpret and evaluate the requirements.
6. Analyze the process interactively to continuously improve the outcome.

Task Management

7. Organize and prioritize multiple tasks in the most effective way.
8. Allocate time and resources according to task complexity and priority.

Prerequisites:

Knowledge of basic computer functions and Windows

Total Class Time: Approximately 10 hours

Outside readings and other resources:

Excel 97 for Windows for Dummies, Greg Harvey
Data Analysis with Microsoft Excel, Kenneth Berk
Learning Business Statistics with Microsoft Excel, John Neufeld
Easy Microsoft Excel 97, Elaine Marmel
Statistics with Microsoft Excel, Kenneth Heilmann
Spreadsheet Applications in Chemistry Using Microsoft Excel, Dermot Diamond

Module 5 – Creating Budgets, Budgets, and More Budgets

Module overview:

When most people hear the word 'spreadsheet', they roll their eyes in fear. Why? Probably because spreadsheet software helps you work with numbers. And numbers scare some people. Believe it or not, spreadsheets can actually help take the fear of numbers away.

A typical spreadsheet displays a grid of rows and numbers on the computer screen. You enter numbers and mathematical formulas in the grid and the computer will calculate the results automatically.

Imagine you are buying a new car and you have gotten all of the information about costs including accessories from three different dealers. Car A is more expensive but has a lower interest rate. Car B is less expensive but has a higher interest rate. Car C has the low interest rate but requires a bigger down payment. How do you figure out which car is the best deal? With a calculator you would have to do all of the computations three times. With spreadsheet software, you have the ability to type in a calculation once and then see different results by just changing a few numbers.

While learning about spreadsheets, you will prepare for your portfolio:

1. A budget spreadsheet
2. A formatted spreadsheet with embedded formulas
3. Spreadsheets with a variety of charts and graphs

Lesson Titles:

- 5-1 How NOT To Be Gridlocked
- 5-2 Money Doesn't Grow on Trees
- 5-3 Enhancing Your Spreadsheet
- 5-4 Cool Calculations
- 5-5 One Picture is Worth 1000 Words

Creating Budgets, Budgets, and More Budgets

LESSON 5-1: How NOT To Be Gridlocked *Approx. time: 1 class*

Lesson overview: This lesson will first cover the basic features of spreadsheet software and familiarize the students with the working screen. Students will then be introduced to the concepts of designing a spreadsheet, view a variety of different uses of spreadsheets, and prepare a design of a spreadsheet.

Students will demonstrate the ability to:

1. Explain and apply spreadsheet design principles. (T/SPS)
2. Describe the ways spreadsheets are used in business. (T/SPS)
3. Analyze and synthesize information. (F/ANL,ES-13)
4. Communicate, document, and evaluate information. (F/ANL, ES-4)

Prerequisites: Knowledge of basic computer functions and Windows

Content required:

1) What is a spreadsheet?
2) Many uses of a spreadsheet:
    a) To organize data, such as numbers and money
    b) They are part of the budgeting process
    c) They are useful in goal-setting and planning
3) Workbook concept (if using Excel)
4) Using online Help to review features
5) Locating and retrieving files

Resources:

Spreadsheet software such as Excel or Works and its on-line Help

Materials checklist:

- ✓ Handout of Module Overview (*JMOD5-Ovr*) for each student
- ✓ Transparency of Screen Layout (optional) – Use Print Screen function in Windows to create.
- ✓ Examples of printouts of spreadsheets as handouts or transparencies
- ✓ Step-by-Step Handout (*JMOD5-1-1*) for each student (may need to be customized depending on software used)
- ✓ Samples of IRCO spreadsheets (*JMOD5-1-2*, *JMOD5-1-3*, *JMOD5-1-4* and *JMOD5-1-5*)
- ✓ Sample of IRCO Simulation Overview (*JMOD5-1-6*)
- ✓ Sample handout of IRCO Employee Discount List (*JMOD5-1-7*)

Equipment checklist:

- ✓ Computers with spreadsheet software
- ✓ Printers with paper
- ✓ Overhead or computer display projector

Teaching strategy:

Part 1 – Introductory Classroom Discussion

1. While distributing the Module Overview (*JMOD5-Ovr*), explain the many uses of spreadsheets in personal and business planning.
2. Describe how spreadsheets are designed with data contained in cells within the spreadsheet as up pass around the examples of printouts of spreadsheets or display each on the overhead.
3. Help students compare and contrast the formats and content of these samples.
4. Ask the students to offer other ways or ideas in which they might see spreadsheets useful.

Part 2 – Hands-on Computer Activity

5. Distribute the Step-by-Step handout (*JMOD5-1-1*) to the students while they open the spreadsheet program and allow enough time for the students to explore each of the features of the spreadsheet, as outlined. Instruct students to print out the procedures for these functions using the on-line Help. Students will have their own 'hard copy' of the steps to follow throughout the module's exercises.
6. Observe as they try out the features and offer assistance, if required.
7. At the end of this exercise, guide the students through the steps of locating, opening, closing/saving and printing (optional) the files of spreadsheets used as examples.

IRCO Simulation-Optional

- Distribute the information for the IRCO Simulation (*JMOD5-1-6*) and the samples of IRCO spreadsheets, if not used above. Allow time for the students to review the handouts and ask questions.
- Using the Employee Discount List handout (*JMOD5-1-7*), explain that, as a Production Assistant for IRCO, each student can order music CDs from one of the company's distributors at greatly reduced prices. Ask the class to determine a reasonable dollar limit for each individual's first order and then instruct them to choose which CDs they want to order. Have the students lay out a simple spreadsheet by hand at the bottom of their handout, which will be transferred to the computer during their next lesson.

Hot Activities:

1. Display or distribute a new example of a spreadsheet and have each of the students prepare a written evaluation of its format and content.
2. Explain to the students that in the next lesson they will develop their own spreadsheets. To conclude today's lesson, ask students to develop a list to

be used in their new spreadsheet of no more than a dozen items (Clothes, food products, sports gear, computer equipment). Have students specify additional information for each item such as might be found in a catalog: Description, Category, Order No., Stock No., Location, and Price. Finally, have students sketch out by hand how they think they will lay out the new spreadsheet.

Assessment methods:

- Observation by instructor of computer activity and participation in classroom discussion.
- Completion of assignments with review and feedback provided by instructor.
- Evaluation of analysis prepared by students of spreadsheet format and content.

Instructor evaluation and comments for improvement:

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STEP-BY-STEP HANDOUT
Lesson 5-1

- After opening the Excel spreadsheet program, select a blank workbook, and access the online Help to review each of the following topics:

  1) How a Workbook Works:
     a) Read the section "About Workbooks and Worksheets" under WORKING WITH WORKBOOKS AND WORKSHEETS
     b) Read each of the sections under MOVING AROUND IN WORKBOOKS

  2) The Screen Layout: Read the sections in "Selecting and Moving Around in a Workbook" under ENTERING DATA AND SELECTING CELLS

  3) Identify the features or uses of:
     a) Categories on the Menu Bar
     b) Buttons on the Toolbars

  4) Explore the spreadsheet by moving about with the mouse pointer to locate:
     a) An Active cell
     b) Sheet tabs
     c) Scroll bars

- Continue to explore the many features of the spreadsheet during the rest of the time available.

- Open and review some examples of spreadsheet files. If you make changes to these files, always save as a new name.

- Exit the program at the end of this exercise.

JMOD5-1-2

SAMPLE SPREADSHEET #1

IRCO

Balance Sheet

March 31, 1999

ASSETS			
Current			
Petty Cash	$10,234		
Cash in Savings	$545,968		
Cash in Checking	$49,853		
Accounts Receivable	$67,540		
Supplies Inventory	$15,340		
Product Inventory	$25,948		
Total Current Assets		$714,883	
Long Term			
Property	$1,503,070		
Accumulated Depreciation	$450,367		
Leasehold Improvements	$75,933		
Total Long Term Assets		$2,029,370	
TOTAL ASSETS			$2,744,253
LIABILITIES AND CAPITAL			
Current			
Accounts Payable	$25,499		
401K Deductions Payable	$125,888		
Group Health Ins. Payable	$5,476		
Notes Payable - Short Term	$4,001		
Fed. Payroll W/H Tax - Payable	$5,789		
State Payroll W/H Tax Payable	$2,348		
FICA Taxes - Payable	$984		
FUTA Taxes - Payable	$342		
SUTA Taxes - Payable	$353		
Total Current Liabilities		$170,680	
Long Term			
Building Mortgage	$1,276,543		
Notes Payable - First Nat. Bank	$550,896		
Total Long Term Liabilities		$1,827,439	
Capital			
Retained Earnings	$456,789		
Net Income	$289,345		
Total Capital		$746,134	
TOTAL LIABILITIES AND CAPITAL			$2,744,253

SAMPLE SPREADSHEET #2

IRCO Marketing Expenses Budget

Description	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Salary Regular	26750	27000	27500	27750	28000	28250	28500	28750	29000	29350	29500	29750	340100
Salary Overtime	2675	2700	2750	2775	2800	2825	2850	2875	2900	2935	2950	2975	34010
Payroll Tax	4413.75	4455	4537.5	4578.75	4620	4661.25	4702.5	4743.75	4785	4842.75	4867.5	4908.75	56116.5
Supplies	1100	1100	2000	2000	1100	1100	2000	2000	1100	1100	2000	2000	18600
Rent	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	30000
Advertising													
Direct Mail	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	36000
Company Brochures	10000	10000					12000	12000					44000
Business Cards	250	250	250	250	250	250	250	250	250	250	250	250	3000
Trade Journal Ads	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	24000
Conventions			35000						35000				70000
Entertainment	4400	4400	14400	4400	4400	4400	4400	4400	14400	4400	4400	4400	72800
Travel	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	60000
Contract Labor			15000						15000				30000
Utilities	500	500	500	500	500	500	500	500	500	500	500	500	6000
Miscellaneous	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	12000
Total for Month	63588.75	63905	115437.5	55753.75	55170	55486.25	68702.5	69018.75	116435	56877.75	57967.5	58283.75	836626.5

SAMPLE SPREADSHEET #3a

L.A. Area Hotel Phone Numbers

NAME	AREA CODE	PHONE NUMBER
Best Western Mayfair	213	484-9789
Beverly Garland's Holiday Inn	818	980-8000
Comfort Inn Pasadena East	626	405-0811
Courtyard by Marriott	310	556-2777
Doubletree Santa Monica	310	395-3332
Figueroa Hotel	213	627-8971
Holiday Inn Downtown	213	628-5242
Hotel Nikko at Beverly Hills	310	247-0400
Loews Santa Monica Beach Hotel	310	458-6700
Milner Hotel	213	627-6981
Mondrian	213	650-8999
Oceana Hotel	310	393-0486
Omni Los Angeles	213	688-7777
Park Hyatt	310	277-1234
Radisson Wilshire Plaza	213	381-7411
Red Lion Glendale	818	956-5466
Regal Biltmore Hotel	213	624-1011
Ritz-Carlton Pasadena	626	568-3900
Sheraton Grande	213	617-1133
Sheraton Universal	818	980-1212
The Beverly Hilton	310	274-7777
Universal City Hilton	818	506-2500
Westin Century Plaza	310	277-2000
Westway Inn	626	304-9678
Wyndham Checkers	213	624-2000

JMOD5-1-5

SAMPLE SPREADSHEET #3b

L.A. Area Hotel Phone Numbers

NAME	AREA CODE	PHONE NUMBER
Best Western Mayfair	213	484-9789
Figueroa Hotel	213	627-8971
Holiday Inn Downtown	213	628-5242
Milner Hotel	213	627-6981
Mondrian	213	650-8999
Omni Los Angeles	213	688-7777
Radisson Wilshire Plaza	213	381-7411
Regal Biltmore Hotel	213	624-1011
Sheraton Grande	213	617-1133
Wyndham Checkers	213	624-2000
Courtyard by Marriott	310	556-2777
Doubletree Santa Monica	310	395-3332
Hotel Nikko at Beverly Hills	310	247-0400
Loews Santa Monica Beach Hotel	310	458-6700
Oceana Hotel	310	393-0486
Park Hyatt	310	277-1234
The Beverly Hilton	310	274-7777
Westin Century Plaza	310	277-2000
Comfort Inn Pasadena East	626	405-0811
Ritz-Carlton Pasadena	626	568-3900
Westway Inn	626	304-9678
Beverly Garland's Holiday Inn	818	980-8000
Red Lion Glendale	818	956-5466
Sheraton Universal	818	980-1212
Universal City Hilton	818	506-2500

Module 5 – Creating Budgets, Budgets, and More Budgets

IRCO Simulation:

Putting You in the Picture: As a new Production Assistant with International Recording Company (IRCO), you have an opportunity to participate in a variety of company activities. With branch offices in several cities in the US and overseas, as well as fewer than 100 employees, there is always a need for your help, whether it's in Administration, Marketing, Recording, or any other of the many departments. IRCO's President, Jordan Ono, along with the talented management team of Leslie Thompson, the Vice President of Marketing; Darryl Hughes, the Administrative Assistant to the President; and Jo Santiago, the Production Manager, is always seeking ways to improve the company.

Everybody at IRCO uses spreadsheets, especially to keep up with sales and production. All those little boxes for all that data. It's enough to make your head spin. But, believe it or not, spreadsheets can be extremely valuable in analyzing any kind of information. Your boss, Jo, is known around the office as the "Spreadsheet King" because of the elaborate worksheets he has been known to prepare.

During the next five lessons, you get a chance to practice making a variety of spreadsheets. After you have mastered developing some personal budgets, you'll also have an opportunity to work on budgets for IRCO.

Confidential

FOR IRCO EYES ONLY

EMPLOYEE DISCOUNT LIST

Barry White - *All Time Greatest Hits* (Mercury)	485698	$7.66
Johnny Mathis - *The Christmas Music of*, (Columbia/Legacy)	484238	$6.49
Boyz II Men - *Christmas Interpretations* (Motown)	482356	$8.05
Tom Petty/The Heartbreakers - *Greatest Hits* (MCA)	474411	$7.35
Bryan Adams - *So Far So Good* (A&M)	467738	$6.22
Celine Dion - *The Colour of My Love* (550 Music-Epic)	467662	$9.17
ABBA Gold - *Greatest Hits* (Polydor)	458406	$7.89
Gloria Estefan - *Greatest Hits* (Epic)	448506	$9.17
Nirvana - *Nevermind* (DGC)	442046	$8.55
The Beach Boys' Christmas Album (Capitol)	439901	$7.50
Peter Gabriel - *Shaking The Tree* (Geffen)	415968	$5.99
Madonna - *The Immaculate Collection* (Sire/Warner Bros.)	414557	$8.73
The John Lennon Collection (Capitol)	405308	$7.50
Journey's Greatest Hits (Columbia)	375279	$6.49
Chicago-*Greatest Hits 1982-1989* (Reprise)	401166	$8.74
U2 - *The Joshua Tree* (Island)	354449	$5.99
Jimmy Buffett - *Songs You Know By Heart* (MCA)	339911	$7.35
Billy Joel - *Greatest Hits Volume I & II* (Columbia)	336396	$8.05

➢ **Lay out the design for your spreadsheet below:**

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LESSON 5-2: Money Doesn't Grow on Trees or How to Plan a Budget Using Spreadsheets *Approx. time: 1 class*

Lesson overview:

Students will construct a simple spreadsheet using a list. They will also practice creating a second spreadsheet that will serve as a timeline for accomplishing this module of lessons. The introduction of basic printing options for spreadsheets is included.

Students will demonstrate the ability to:

1. Explain and apply spreadsheet design principles. (T/SPS)
2. Develop, edit, save, retrieve and print spreadsheets. (T/SPS)
3. Apply spreadsheet principles to real-life and business situations. (T/SPS, ES-8)
4. Identify focus and general parameters of task or project. (F/TM, ES-15)
5. Follow directions that lead to solving real-life problems. (ES-4, ES-12)
6. Break down tasks into activities. (F/TM)

Prerequisites: Lesson 5-1

Content required:

1) Review principles for making a budget
2) Entering Data
3) Editing a Worksheet
4) Printing Spreadsheets

Resources:

Business textbook: chapter on developing budgets

Materials checklist:

- ✓ Completed assignment from Lesson 5-1
- ✓ Step-by-Step Handout (*JMOD5-2-1*); may need to be customized

Equipment checklist:

- ✓ Printer with paper

Teaching strategy:

Part 1 –Preparatory Activity

1. Review the highlights from the previous lesson.
2. Verify that each student has prepared a list.
3. Emphasize the different uses of spreadsheets.
4. Describe the first types of spreadsheet that the students will develop.

Part 2 – Hands-on Computer Activity

5. Distribute the Step-by-Step Handout (*JMOD5-2-1*).
6. Explain that the purpose of this exercise is for students to create a simple spreadsheet based on their list as well as create a second spreadsheet that shows a timeline for accomplishing the lessons in this module. (Depending on the class, it may be advantageous to have students work in pairs for this first part.)
7. Help the students develop categories for each of the columns of their spreadsheets depending on the list they are using. For example:

   A1 – Product Name
   B1 – Description
   C1 – Category
   D1 – Order #$/Stock #
   E1 – Location
   F1 – Price

   IRCO Simulation- Optional

   If students are using their list of CDs, suggest these names for their columns:

   A1 – Name of CD
   B1 – Artist
   C1 – Recording Co
   D1 – Order Number
   E1 – Price
   F1 - Source

8. Monitor the progress of the students as they complete the instructions in the handout. Take up all of the copies of the WISH spreadsheet for evaluation.

HOT Activities:

1. Instruct students to outline how they would develop a spreadsheet on their own, following the parameters listed on the next page of the Step-by-Step Handout. Have students write down the steps and make a rough sketch of the spreadsheet as it eventually will look on the computer.
2. Using the results of the student strategy session, ask the students to share the steps that they would take to develop their spreadsheet, and to record these steps on the whiteboard. Discuss these steps and any implications to the resulting spreadsheet. Have students continue by entering the data on the second page of the handout into a spreadsheet based on the steps outlined in the class discussion and to retrieve the printed copies at the end of the activity.
3. If time permits, ask students to design and develop another spreadsheet of a prioritized list for the long term which would include such items as a car, savings, travel sites, or clothes for next season.

Assessment methods:

- First spreadsheet (*WISH*) should be graded on accuracy of items, descriptions, prices, completeness and successful spreadsheet format.
- Second spreadsheet (*MYTIME*) should be graded on ability to meet the specifications of the spreadsheet design and printing directions.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 5-2

1. Open the spreadsheet program and create a new file saved as *WISH.*

2. Enter the names of the columns in the specified cells as instructed based on the content of your list.

3. Widen the columns so that you can see all of the typed text.

4. Enter the list from the Lesson 5-1 assignment in column A, starting at Row 2.

5. When finished listing the items, list the corresponding information in columns B, C, D, and so on, as necessary.

6. If any of the information is the same, try using the clipboard to copy and paste it to any of the other cells.

7. Save your file and **Remember:** *Always preview your work before printing!*

8. Print the spreadsheet in the following manner:
   - Contents only
   - Page orientation – portrait
   - Grid lines visible
   - Centered horizontally on the page

9. Close the *WISH* file and turn in your printed copy.

10. Continue to the next page when instructed.

NAME:_______________________

1. Develop a design for a spreadsheet with the following information:
   - Days of the week for the next two weeks
   - Categories of time available for class and social activities
   - Classes scheduled at appropriate times
   - Any activities already scheduled at designated times

2. Outline the steps that you would take as you prepare the layout of the spreadsheet.

3. Draw a rough sketch of how the spreadsheet will look on the computer screen.

3. When instructed, open a new spreadsheet file.

4. Save the new file as *MYTIME*.

5. Enter the data for the new spreadsheet based on the steps and design above.

6. Prepare the entire spreadsheet, even if all the time slots are not filled in, with the following characteristics and then preview what you will print.
   - Page orientation - landscape
   - Grid lines visible
   - Fit to Page
   - Custom Header: My Schedule, centered and bolded in 20-pt. type
   - Centered both horizontally and vertically

7. Save, print, and close your file.

8. Turn in your printed copy.

Creating Budgets, Budgets, and More Budgets

LESSON 5-3: Enhancing Your Spreadsheet *Approx. time: 1 class*

Lesson overview:
Students continue to learn about features of a spreadsheet, this time using a sample spreadsheet file that has been developed by the instructor or included with the lesson. Additional editing functions and introduction of formatting techniques will be covered. Students will also have an opportunity to practice with one of their own spreadsheets.

Students will demonstrate the ability to:
1. Apply spreadsheet principles to real-life and business situations. (T/SPS)
2. Identify focus and general parameters of task or project. (F/TM)
3. Analyze and compare different solutions to a problem; share findings with other team members or classmates. (F/ANL, ES-7)

Prerequisites: Lessons 5-1 and 5-2

Content required:
1) More editing functions
2) Formatting a spreadsheet

Resources:
Spreadsheet software manuals

Materials checklist:
- ✓ Completed spreadsheet, MYTIME, from Lesson 5-2
- ✓ Student spreadsheet file *MYTIME*
- ✓ Example of spreadsheet developed by instructor to be modified by students
- ✓ Example of modified version of the spreadsheet
- ✓ Step-by-Step Handout (*JMOD5-3-1*) may need to be customized
- ✓ Sample IRCO Simulation spreadsheet file (*JMOD5-3-2*)
- ✓ Sample IRCO Simulation modified spreadsheet of Music by George Gershwin (*JMOD5-3-3*)

Equipment checklist:
- ✓ Computers with spreadsheet software
- ✓ Printers with paper
- ✓ Overhead or computer display projector

Teaching strategy:

Part 1 – Before Class Preparation for Instructor
1. Prepare an example of a spreadsheet file which will allow editing opportunities listed in the Step-by-Step handout (*JMOD5-3-1*) if not using the

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IRCO Simulation. Save in its original form and then print out a modified version.

Part 2 – Preparatory Activity

2. Review the highlights from the previous lesson and verify that each student has completed the two spreadsheet files.
3. Explain that the objective of today's lesson is to practice additional editing features available for making spreadsheets more attractive and readable, while distributing the Step-by-Step handout (*JMOD5-3-1*).
4. Display or distribute the modified version of the spreadsheet and point out that this is how their revision of the spreadsheet file should look after they complete the Step-by-Step handout.

IRCO Simulation - Optional

One of the other Production Assistants at IRCO prepared a spreadsheet for a CD that will be produced about George Gershwin. It needs some refinements made to it before it can be distributed to the staff. The students are responsible for making the improvements to produce a better spreadsheet.

- Distribute the handout of the final results of the Gershwin spreadsheet (*JMOD5-3-3*) that is provided to guide the students as they make the necessary changes.

Part 3 – Hands-on Computer Activity

Note to Instructor: There are a couple of ways to accomplish this practice session:

- One way would be to pair off the students (possibly a stronger student with a weaker student) and allow them to discover together how to accomplish the modifications.
- Another way would be to guide the class through the modifications by asking them to suggest methods as to how to accomplish the changes.
- Or, you may choose to lead the class step-by-step through making the required changes.

5. Instruct the students to open the spreadsheet program, locate, and retrieve the file which you created or, if using the IRCO Simulation, *JMOD5-3-2*.
6. Allow time for students to accomplish the modifications, depending on the method chosen, and provide assistance if necessary.
7. Be sure that students have previewed and saved their results before they print their copy to turn in.

Part 4 –Classroom Discussion

8. Return the evaluated spreadsheets to the students and review the list of editing and formatting operations performed.
9. Ask students to share how they accomplished each of the changes and demonstrate, if necessary, any or all of the operations again.

10. Point out that there are sometimes different ways or steps to achieve the same end results.

HOT Activities:

1. Instruct students to develop a better version of their spreadsheet MYTIME by incorporating as many of these new editing features as time allows. Observe the students as they complete the exercise and offer assistance where required. When students are satisfied with their changes, instruct them to save the modified spreadsheet as *NEWTIME* and print a copy. Retrieve the printed copies at the end of the activity.
2. Have students analyze their choices of editing features in either or both of the lesson's spreadsheets and describe in a written paragraph at the bottom of the copy to be turned in how the improvements aid in reading the content.
3. Ask students to choose a personal list of information which they use frequently (addresses, phone numbers, bills to pay, dates to remember, etc.) and to develop an attractive spreadsheet incorporating as many formatting features as they can.
4. Provide the students with one collection of information – class schedules, event calendars, lunch menus, etc. – and have them enter a contest for the best spreadsheet design. Select a group of judges to develop the criteria for evaluating each entry by the students. Conduct the contest and display the evaluation criteria and the winning entries.

Assessment methods:

- First spreadsheet should be assessed on how closely it resembles the sample.
- Students self-assess by comparing their output.
- Second spreadsheet should be evaluated on the ability to use a variety of different formatting techniques and creativity. Spreadsheets are displayed and assessed by students and instructor.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 5-3

1. Using the spreadsheet file provided and the handout of its modified version, practice the following editing and formatting techniques:

   - Deleting Columns
   - Inserting Rows and Columns
   - Copying/Pasting Data
   - Find/Replace
   - Spell Checker
   - Adjusting Column Widths or Row Heights
   - Aligning Data in Columns
   - Aligning Data in Cells
   - Wrap within Cells
   - Merge Cells
   - Changing Fonts
   - Applying Different Number Formats
   - Using Borders
   - Using Shading

2. Preview and save your edited and formatted spreadsheet regularly to determine if it looks like the finished sample.

3. Upon completion of all of the changes, save the file as *MYCHANGE* and print a copy to turn in to your instructor.

JMOD5-3-2 Spreadsheet File

Music By George

Song Title	1st Copyright	2nd Copyright	Movie or Play	Composer	CD Order	Royalty Due	Date Recorded	Percent Mastered
Someone To Watch Over Me	1926	1950	Oh,Kay	Gershwin	1	1.5	15-May	0.75
The Man I Love	1924	1945	Lady Be Good	Gershwin	2	2.05	3-May	0.8
Love Is Here To Stay	1938	none	Amercan in Paris	Gershwin	3	3	30-Apr	0.95
But Not For Me	1930	none	Girl Crazy	Gershwin	4	0.95	23-May	0.4
I've Got a Crush On You	1930	none	Strike Up the Band	Gershwin	5	1.25	5-Jun	0.25
Of Thee I Sing	1931	none	Of Thee I Sing	Gershwin	6	1	11-May	0.7
Embraceable You	1930	1949	Girl Crazy	Gershwin	7	1.8	10-Jun	0.35
I Got Rhythym	1930	none	Girl Crazy	Gershwin	8	2.25	1-May	0.85
They All Laughed	1937	none	Shall We Dance	Gershwin	9	1.33	25-Jun	0.1
'S Wonderful	1927	none	Funny Face	Gershwin	10	1.4	18-May	0.75
Let's Call the Whoole Thing Off	1937	none	Shall We Dance	Gershwin	11	2	9-Jun	0.2
They Can't Take That Away From Me	1937	none	Shall We Dance	Gershwin	12	2.2	1-May	0.85

Music By George Gershwin

Song Title	Movie or Play	Copyright		CD Order	Royalty Due	Date	Percent
		1st	2nd				
Someone To Watch Over Me	*Oh,Kay*	1926	1950	1	$1.50	5/15/98	75%
The Man I Love	*Lady Be Good*	1924	1945	2	$2.05	5/3/98	80%
Love Is Here To Stay	*American in Paris*	1938	none	3	$3.00	4/30/98	95%
But Not For Me	*Girl Crazy*	1930	none	4	$0.95	5/23/98	40%
I've Got a Crush On You	*Strike Up the Band*	1930	none	5	$1.25	6/5/98	25%
Of Thee I Sing	*Of Thee I Sing*	1931	none	6	$1.00	5/11/98	70%
Embraceable You	*Girl Crazy*	1930	1949	7	$1.80	6/10/98	35%
I Got Rhythm	*Girl Crazy*	1930	none	8	$2.25	5/1/98	85%
They All Laughed	*Shall We Dance*	1937	none	9	$1.33	6/25/98	10%
'S Wonderful	*Funny Face*	1927	none	10	$1.40	5/18/98	75%
Let's Call the Whole Thing Off	*Shall We Dance*	1937	none	11	$2.00	6/9/98	20%
They Can't Take That Away From Me	*Shall We Dance*	1937	none	12	$2.20	5/1/98	85%

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LESSON 5-4: Cool Calculations *Approx. time: 1 class*

Lesson overview:
During the first part of the lesson, students will incorporate formulas into their own spreadsheet named *WISH*, while troubleshooting basic problems. The second part of the lesson will require students to create a spreadsheet with formulas based.

Students will demonstrate the ability to:
1. Explain and apply spreadsheet design principles. (T/SPS)
2. Develop, edit, save, retrieve, and print spreadsheets. (T/SPS, ES-15)
3. Format spreadsheets. (T/SPS, ES-8)
4. Use simple formulas. (T/SPS)
5. Apply math and logical thinking to spreadsheet designs.
6. Troubleshoot formulas in spreadsheets. (T/SPS, ES-12)

Prerequisites: Lessons 5-1, 5-2, and 5-3

Content required:
1) Explanation of how formulas work
2) Description of basic arithmetic functions

Resources:
Spreadsheet software manuals

Materials checklist:
- ✓ Student spreadsheet file *WISH* from Lesson 5-2
- ✓ Transparency or handout of the Math Functions Chart (*JMOD5-4-1*) for each student
- ✓ Sample spreadsheets prepared by instructor to illustrate each example of Math Functions on Chart
- ✓ Sample IRCO Simulation handout of Jo's Data (*JMOD5-4-2*)

Equipment checklist:
- ✓ Computers and printers
- ✓ Overhead or computer display projector

Teaching strategy:
Part 1 - Pre Class Instructor Preparation
1. Prepare simple spreadsheets for each of the math functions to be discussed showing examples of the calculations.

Part 2 - Classroom Discussion

2. Explain the concept of formulas to the students.
3. Use the Math Functions Chart handout (*JMOD5-4-1*) or transparency to provide examples and demonstrate the examples using the simple spreadsheets. If students seem to struggle with the math, continue to provide examples or have them practice developing more examples of each function.
4. Instruct students to open the spreadsheet program and to locate and retrieve the *WISH* file.

Part 3 –Hands-on Computer Activity

5. Ask the students to suggest the types of formulas that would make sense to add to their spreadsheet and record the correct answers on the board.
6. Allow time for the students to add these formulas to their spreadsheet and make any other modifications they would like to enhance the format.
7. Have students also try out various printing options before printing out their final versions.
8. Be sure that the students save their file and turn in the copy.

IRCO Simulation-Optional

- Distribute the Jo's Data Handout (*JMOD5-4-2*) and review the information on the handout to clarify the assignment. Offer any assistance as the students work on their exercise.
- Have students develop a variation of this spreadsheet based on the following changes: Instead of sales increasing at $55,000, increase sales at a rate of 2% per month. Calculate the profit at the end of one year. Find the average for monthly sales using the spreadsheet to make the calculation.

HOT Activities:

1. Assign students the task of developing one or more complex spreadsheets demonstrating the use of formulas. Work with the students to develop the possible content for their spreadsheets and provide time if they need to accomplish any research to gather their facts. Good examples for this exercise might be based on local sports teams performances, salary predictions for different industries of interest for the students, or center activities that can be quantified.

Assessment methods:

- Instructor assesses spreadsheets constructed by students on criteria that are accurate, easily read, and with a proper label in header.
- Students evaluate their own ability to develop variations of spreadsheets.

Instructor evaluation and comments for improvement:

Math Functions Chart
Lesson 5-4

The real power of spreadsheets is in doing calculations, tabulating disparate items, and even generating graphs. Simple arithmetic functions will be used to calculate the totals in the WISH file.

A formula in a spreadsheet is a sequence of values or cell references and operators that result in a new value. The operators are similar in all spreadsheet programs. For example, in Excel you must put in an **equal sign** (=) before the cell references or values and the operator. **A colon (:)** is used between values when there are more than two of them to be added or averaged.

Please refer to the chart of math functions below and their Excel Operators with examples. (More information is also available in the online Help section.)

Function	Abbreviation (Operators)
Add +	EXAMPLES: =sum(C4) =sum(F3:K3) =sum(G34+M37) or =G34+M37 =B17+2000
Subtract -	EXAMPLES: =(D4-E4) =(C10-55) =(3256-412)
Multiply *	EXAMPLES: =(A3*A8) =(F16*.025) =(23789*235)
Divide /	EXAMPLES: =(G33/H12) =(J45/33) =(538/5)

IRCO SIMULATION
Jo's Data
for
IRCO Production Worksheet

Information to be included in a new spreadsheet:

- For this year, sales started at $1,500,000 in January and increased $55,000 every month.
- Royalties must be paid to the composers and performers at 4.5% of the sales every month.
- Salaries started at $330,000 per month in January, were constant until November, when they went up $100,000 because they hired new engineers.
- Office expenses were $176,000 every month.

Instructions:

1. Place all of the above data into one table.
2. Format the spreadsheet so that the table is logical, all monetary values have dollar signs, and it is easy to read.
3. Find the Gross Profit and include the amount on the spreadsheet (sales minus all of the expenses).
4. Print your final copy. (Use the Print Preview to make sure it fits onto one page.)
5. Save the file as *IRCO1*.
6. Turn in your copy to the instructor.

LESSON 5-5: One Picture is Worth 1000 Words: Creating Graphs and Charts

Approx. time: 1 class

Lesson overview:
Students will enter data in spreadsheets to create appropriate graphs and charts with proper labels.

Students will demonstrate the ability to:
1. Create graphs and charts from spreadsheets. (T/SPS)
2. Analyze/synthesize and communicate/document information. (F/ANL)
3. Identify general parameters of task and gather data required. (F/TM, ES-15)

Prerequisites: Lessons 5-1,5-2, 5-3, and 5-4

Content required:
1) How charts and graphs can improve presentation of data
2) Variety of types of graphs and charts
3) Using the Wizard's features

Resources:
Online Help in software program

Materials checklist:
- ✓ Student spreadsheet files created in Lesson 5-4
- ✓ Sample IRCO Simulation handout (*JMOD5-5-1*)

Equipment checklist:
- ✓ Computer and printers with paper

Teaching strategy:

Part 1 – Introductory Discussion
1. Explain that the purpose of this lesson is to use the spreadsheet data to generate graphs and charts. The goal is readability and ease of communication, not to be fancy or ornate - just legible.
2. Guide students in a discussion of different designs considerations when addressing different audiences with a data such as in a spreadsheet. For example, people have a variety of different ways of visually expressing the same data. Provide a simple sample exercise with a selected group of students who are asked to pictorially depict the same topic (hunger throughout the day, days when they are most productive at school, music interests of the entire class, etc.). After the selected students have finished the task, have those students present their works and the have the class

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compare the results (which should be different) and discuss the explanations for the differences.

IRCO Simulation-Optional

- Distribute the handout (*JMOD5-5-1*) explaining that the students will generate a line graph for IRCO for the eleven months shown.
- Instruct the students to develop three more different charts or graphs using the same IRCO data and to print these after saving as files *IRCO3*, *IRCO4* and *IRCO5*. Have the students prepare a written analysis of the three new printouts which compares/contrasts the ability to understand better the information that is presented
- Using the *IRCO1* file created in Lesson 8-4, have each student format one chart and one graph with the information and print their results. Upon completion, allow students to present their different versions and conduct a discussion on the visual merits of each.

Part 2 – Hands-on Computer Activity

3. Demonstrate the use of the spreadsheet Wizard that guides users through the development of different kinds of charts and graphs.
4. Instruct students to practice creating different types of charts and graphs using one of their spreadsheet files and save each version under a new file name.
5. Monitor the progress of the students as they complete the exercise and request any problems be brought up so that others can avoid the same pitfalls.
6. Ask the students to print each example only after having it approved by the instructor.

HOT Activities:

1. Have students use another of their spreadsheets to construct a graph or chart and provide a written explanation why that method was the best way to present their data.
2. Display examples of the best charts and graphs developed in the class. Conclude by conducting an informal discussion about the different ways that information can be presented and which ways are most effective.

Assessment methods:

- Observation of students participating in discussion and exercises by instructor.
- Instructor review and written feedback provided of spreadsheets and explanations developed by students.
- Superior examples displayed.
- Students' self-assessment comparing their work with examples.

Instructor evaluation and comments for improvement:

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IRCO SIMULATION HANDOUT
Lesson 5-5

Data is entered into cells. The appropriate cells are then selected and a graph is made from them. Labels, titles, grid lines or types of graph are then selected or altered. The overall goal is to construct a graph that communicates clearly and quickly the desired information.

The sample data for the new spreadsheet:

Month	Revenues
Jan	2,101
Feb	2,201
Mar	2,301
Apr	2,401
May	2,501
Jun	2,601
Jul	2,701
Aug	2,801
Sep	2,901
Oct	3,001
Nov	3,101

1. Open a new workbook file and save as IRCO2.
2. Select "File", "Page Setup", "Header and Footer, "Custom Header" and type your name into either the right or left section.
3. Start in cell A1 and enter the column titles, all of the names of the months, and dollar amounts (no dollar signs) as shown above.
4. When those are entered, select all of the cells that have anything typed into them, from A1 to B12. (To select, point at a corner cell - A1 for instance - click once, hold, drag diagonally to the opposite corner, release.) They will be reversed in color, except for one.
5. Select "Insert" then "Chart". Follow the Wizard's options to design a graph, shown in the following example:
   - Select a line graph.
   - For the Title type in "IRCO Revenues".
   - Axis Titles X-axis is "Months" and Y-axis is "Revenue (dollars)" where the dollars are the units of measure and very important to include.
   - The graph should fill one page (page 2) without being cut off on any side. The data will be left on page one; do not have the graph overlap the data.

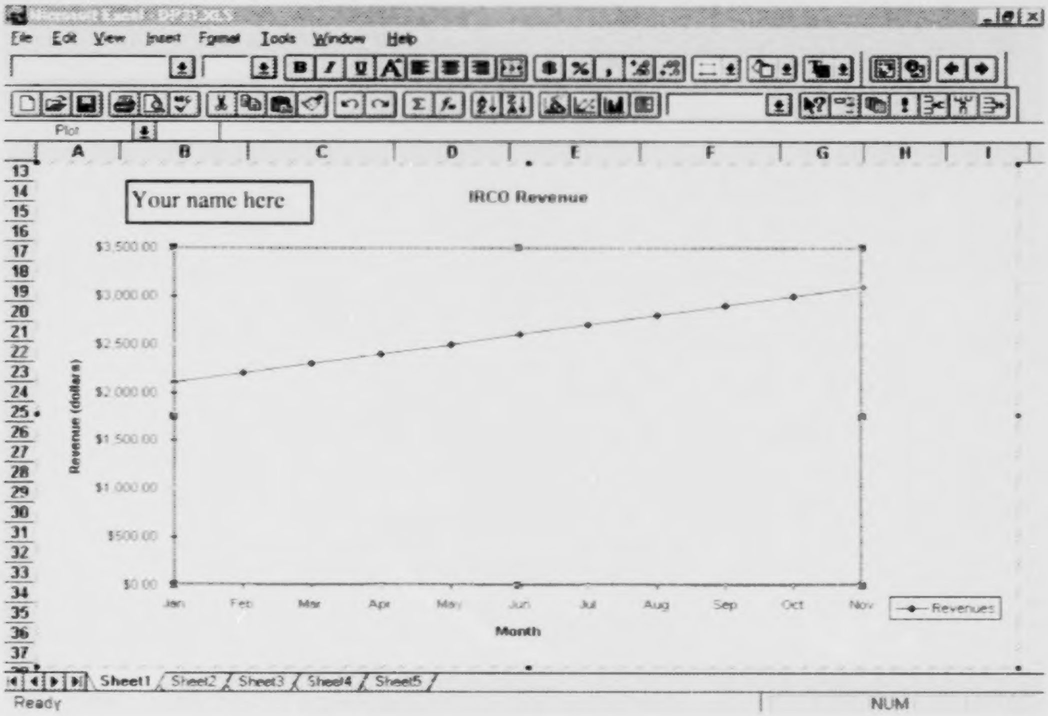
File
Edit
View
Insert
Format
Tools
Window
Help
Plot
Your name here
IRCO Revenue
$3,500.00
$3,000.00
$2,500.00
$2,000.00
$1,500.00
$1,000.00
$500.00
$0.00
Revenue (dollars)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Month
Revenues
Sheet1
Sheet2
Sheet3
Sheet4
Sheet5
Ready
NUM

Figure 1: Finished Graph

6. Save your work and print a copy.

BEST COPY AVAILABLE

Module 6: Developing Databases

Module 6 – Developing Databases

Learner Outcomes:

Database

1. Design, create, modify and use relational databases, including developing queries, forms and reports.
2. Apply databases to actual situations and business problems.

Facilitation and Customer Service

3. Demonstrate personal qualities, attitudes and key skills that foster successful relationships with customers.

Analysis and Task Management

4. Gather data and interpret data to identify and document requirements.
5. Identify, organize and prioritize multiple tasks in an effective way.
6. Evaluate results and continuously improve process.

Team Work

7. Organize and work in a team setting.
8. Recognize expertise and learn from others, and demonstrate collaborative decision-making.

Prerequisites:

Knowledge of basic computer functions and Windows

Total Class Time: Approximately 20 hours

Outside readings and other resources:

Envisioning Information, Edward Tufte, Graphics Press
Direct & Database Marketing, Graeme McCorkell
Guest speaker from a local mailing-list company
Sample CD of national phone numbers

Module 6 –Developing Databases

Module overview:

- When the sales clerk looks up an item for you to see if it is available – that's a database!
- When the pharmacist checks to see if the prescription can be refilled – that's a database!
- When you call the operator at Directory Assistance to get the new phone number for a friend – that's a database!
- When you want to keep track of all of your possessions – that's a database!

Data, data, data. Data is information. And without the ability to record, find, update, organize, and report information, it would be of no use. It is database software that allows us to manage all of these functions. As you will experience in this module, the better you are able to manage the data, the more useful the information becomes to you.

For your portfolio, you will produce:

1. A data design specification sheet for a simple database
2. A report sorted by zip code
3. A data entry form
4. A data design specification sheet for a relational database
5. Reports with customized formats
6. A report based on a query

Lesson Titles:

- 6-1 Designing and Creating a Database
- 6-2 Sorting Data
- 6-3 Create and Modify Tables
- 6-4 Searching Tables
- 6-5 Forms
- 6-6 Using Forms to Enter Data
- 6-7 Query This
- 6-8 You're On Report
- 6-9 Report This Query
- 6-10 A New Database

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Developing Databases

LESSON 6-1: Designing and Creating a Database *Approx. time: 1 class*

Lesson overview:
The purpose of this lesson is to introduce the use of database software, identifying the major parts of a database and designing a simple database that the students will create.

Students will demonstrate the ability to:
1. Explain the purposes of a database. (T/DB)
2. Identify and define the purpose of database elements. (T/DB)
3. Analyze relationships between parts and wholes. (F/ANL)
4. Learn from others and build on others' expertise and strengths. (F/ANL,ES-6)
5. Design and create a simple database. (T/DB)
6. Work effectively with members of the team. (F/TW, ES-10)
7. Analyze, summarize, and document information. (F/ANL, ES-13)

Prerequisites: Knowledge of basic computer functions and Windows

Content required:
1) Purposes of database
2) Parts of a database
3) Designing a simple database
4) Create a simple database
5) Modify the database
6) Switch between views, form or list

Resources:
Manuals for database software program being used

Materials checklist:
- ✓ Handout for each student of Module Overview (*JMOD6-Ovr*)
- ✓ Transparency and handouts for each student of Data Design Specification Sheet (*JMOD6-1-1*)
- ✓ Index cards or note cards for each student
- ✓ Details of IRCO Simulation (*JMOD6-1-2*)
- ✓ Sample of IRCO Simulation Data Design Specification Sheet (*JMOD6-1-3*)
- ✓ Step-by-Step Handout for each student (*JMOD6-1-4*)
- ✓ Sample of IRCO Simulation Step-by-Step handout (*JMOD6-1-5*)

Equipment checklist:
- ✓ Computer with database software for each student
- ✓ Computer display and/ or overhead projector

Teaching strategy:

Part 1 - Preparatory Discussion/Demonstration

1. Review the different types of application software, concentrating on the use of database software. Give the students different scenarios. They should respond with the correct type of application software, such as "what type of software would you use to type a letter?"
2. Distribute the Module Overview (*JMOD6-Ovr*) while explaining the purposes of a database, for example:
   - Manage large amounts of information
   - Easily find and use information needed
3. Using the computer display, familiarize students with the screen layout and the similar menu structures that the students have seen in other Windows applications. Produce a simple database with the Wizard function, explaining the steps along the way.

Part 2 – Classroom Activity "Human Database"

4. Pass out index cards to the students. Ask them to list the following information on their cards: a) first name; b) lucky number (single digits only); c) favorite color; d) most watched TV program; and e) favorite food.
5. Using the information on their index cards, describe the parts and functions of a database by having the students actually play the parts of records. (Each student represents a record with five fields.) Using the data in the five fields, try these activities:
   - Line the students up in alphabetical order by first name.
   - Divide into groups by favorite color.
   - Group the students who have a common lucky number, TV program, or favorite food.
   - Find students who have the same lucky number, favorite color, and favorite food.
6. Retrieve the index cards from all of the students and save for Lesson 6-3.

Part 3 – Individual or Team Activity

7. Distribute the handout of the Data Design Specification Sheet (*JMOD6-1-1*) and walk the students through the steps to design a simple database using a scenario such as organizing 1) the contents of their address book, backpack/purse, locker, or room; 2) reference books located in the classroom; 3) current movies running at local theaters; or 4) time slots available for scheduling use of game equipment.
8. Suggest some appropriate fields and demonstrate how the data would be organized by using a transparency of the Data Design Specification Sheet. Continue by asking the students to suggest more fields which are needed (some suggested fields ultimately may be rejected). Then design the database on the overhead as the students copy the designs on their worksheets in the space provided.

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IRCO Simulation-Optional

- Distribute the IRCO Simulation Details handout (*JMOD6-1-2*) and allow time for the students to review the information.
- Ask the students to analyze the following scenario and use the Data Design Specification Sheet: (*JMOD6-1-3*) to develop the design for a database: Up to now, IRCO has kept all its personnel records in a filing cabinet. Jo asks you to develop a list of fields for a new database containing the personnel information without his help.
- Monitor the progress of the students and offer assistance if needed.
- When all of the students are finished, ask them to share their work with the class. Record the different suggested fields on the board and highlight which ones would be considered essential for a good design.
- Distribute the IRCO Simulation Step-by-Step handout (*JMOD6-1-5*) for the next activity.

Part 4 – Hands-On Computer Activity

9. Instruct the students to open their database application and walk them through each of the processes to add, delete and edit records in a sample database. Explain basic cell formatting/specifications as required.
10. Distribute the Step-by-Step handout (*JMOD6-1-4*) and assign the students the task of identifying their own choice for data (wardrobe, shoes, athletic equipment, CD collection, addresses of friends, etc.) and design the specifications for a new database. Allow the students to work in pairs for this exercise, especially if they appear to be grasping the database concepts slowly.
11. Provide enough time for the pairs of students to complete all five parts of the exercise, monitoring their progress as they add, delete, and change the records to their database and offering assistance when necessary.

HOT Activities:

1. Show the class an example of a computerized database, or instruct the students to visit a web site that offers a product catalog section. Ask students to identify all of the possible fields that they see being utilized. Have them share their results with the class (in spelling bee fashion where you sit down when you miss one) until the students with the highest correct answers are the only ones left standing. Reward these students in some appropriate fashion!
2. Besides the obvious fields for the above database, have the students analyze the situation and offer additional fields that might be valuable to customer service in determining if there are any trends that could improve the products or catalog service.
3. Ask the students to describe the visual and functional differences between the two views in a database, either orally or in a couple of short written paragraphs.

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Assessment methods:

- Instructor review and evaluation of Data Design Specification Sheets prepared by each student.
- Observation by instructor of student participation and understanding of human database.
- Student assessment of the design of databases that they developed with their own data and comparison of results.
- Display of superior Web databases and acknowledgement of and rewards given to ‘data bee’ winners.
- Instructor review and evaluation of the printouts the students submit.
- Observation of student participation in exercises and contributions to meaningful class discussion.

Instructor evaluation and comments for improvement:

Database Design Specification Sheet
Lesson 6-1

What are some fields that should be included in your database?

Fields needed: ____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________

Use the following form to design the database.

Module 6 –Developing Databases: May the (Sales) Force Be with You

IRCO Simulation:

Putting You in the Picture: As a new Production Assistant with International Recording Company (IRCO), you have an opportunity to participate in a variety of company activities. With branch offices in several cities in the US and overseas, as well as fewer than 100 employees, there is always a need for your help whether it's in Administration, Marketing, Recording, or any other of the many departments. IRCO's President, Jordan Ono, along with the talented management team of Leslie Thompson, the Vice President of Marketing; Darryl Hughes, the Administrative Assistant to the President; and Jo Santiago, the Production Manager, is always seeking ways to improve the company.

"This is the year for change." That's what Jordan Ono, our president at the IRCO, announced at our company meeting for all employees last month. And, things are beginning to change… The move to computerization of all the functions throughout the company has already begun, and you are right in the middle of where it's happening!

Jordan has now directed your manager, Jo Santiago, to work at getting all of the company data computerized. Jo asks you to assist him in starting this important project. Over the next three weeks you'll learn as much as you can about databases, and you'll start to apply this knowledge in setting up not only a customer database, but several other types of databases as well.

You've already seen all of the little file boxes that contain the salespeople's note cards and you've seen the huge cabinets in the filing room next to Darryl's office. All that information needs to be computerized so it's more accessible, organized, and useful. So you know you've got your work cut out for you! With the help of some of the other Production Assistants, you'll no doubt succeed at completing the project for Jo and the company.

You will produce for your portfolio:

1. A data design specification sheet for a simple database
2. A customer report sorted by zip code
3. An equipment report and data entry form
4. A data design specification sheet for a relational database
5. Customized reports of customers and equipment
6. A customer report showing only records for Seattle and Branch #81

IRCO Database Design Specification Sheet
Lesson 6-1

Up to now, IRCO has kept all its personnel records only in a filing cabinet. Jo asks you to tackle this next part of the project without his help.

In the space below, list all fields that should be included in the database. Then design the database.

Fields needed:

Design the database in the space below.

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STEP-BY-STEP HANDOUT
Lesson 6-1

Document each of the five steps as you manage your new database:

Part A

- Create the design for a database below.

Part B

- Add 10 records to your database. List the content for every record in one field on the back of this sheet.

Part C

- Delete 2 records from the database. Which records and content did you delete?

Part D

- Change records in your database. Identify which records you changed.

Part E

- Save the database as **LES 6-2.**
- Change the database to list view.
- Print one copy.

IRCO Simulation Step-by-Step
Lesson 6-1

Part A

IRCO has decided to create a database of the names and address of customers who have returned CDs for (apparently) no good reason.

➢ Create the design for a database that includes the data elements below:

Part B

➢ Add the following names and address of customers who have returned CDs:

CONFIDENTIAL IRCO DATA

William Smith 2376 137th Avenue Northeast Seattle, WA 98113	Colin Allcars 672 Northwest Market Street Seattle, WA 98117	Zeke Zedders 817 817th Avenue North Seattle, WA 98111
Marge Inoferror 789 1st Street Bellevue, WA 98004	Dirk Atkins 89 Mercer Way Mercer Island, WA 98276	Frank Fink 888 Bellevue Way Bellevue, WA 98006
Doug Dingle 900 Roosevelt Avenue Seattle, WA 98117	Fritz Zegstroo 892 Maupin Road Mt. Vernon, WA 98273	Type Your Own Name Type Your Address Type Your City, State, ZIP

Part C

➢ Delete the following records from the database:

Zeke Zedders
William Smith

Part D

- Change the following records in your database:

  Address of Marge Inoferror to 2nd Street
  ZIP code of Doug Dingle to 98177
  City of Frank Fink to Redmond

Part E

- Save the database as **LES 6-2.**
- Change the database to list view.
- Print one copy.

Developing Databases

LESSON 6-2: Sorting Data *Approx. time: 1 class*

Lesson overview:
One of the most important reasons for using a database is so that one can find specific records or analyze information quickly and easily. To demonstrate this concept, students will add more records to their databases and then sort the data by single fields.

Students will demonstrate the ability to:
1. Open an existing database. (T/DB)
2. Sort data by a single field in a database. (T/DB, ES-8)
3. Identify tasks and organize in appropriate sequence. (F/TM)
4. Access and use information from manuals and computers. (ES-13)
5. Document steps for completing task and share results with the class. (ES-7)

Prerequisites: Lesson 6-1

Content required:
1) Open a database
2) Add records to the database
3) Sort data by different fields

Resources:
Manuals for database software program being used.

Materials checklist:
- ✓ Transparency and Step-by-Step handout (*JMOD6-2-1*) for each student
- ✓ Set of wooden alphabet blocks
- ✓ Sample of IRCO Step-by-Step handout (*JMOD6-2-2*)

Equipment checklist:
- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:
Part 1 – Review Discussion
1. Instruct the students to start the database program and open *LES 6-2* and share their descriptions of the visual and functional differences in the two views that they identified in Lesson 6-1. Ask for ideas about why each type is necessary.
2. Distribute the Step-by-Step handout (*JMOD6-2-1*) and explain that, besides entering additional data into the database, they also will practice sorting the

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data. Be sure to emphasize that sorting refers only to placement of records in a certain order so as not to confuse this with the 'query' feature, which will be coming up in later lessons.

3. Using the set of blocks, ask a student to demonstrate what an ascending sort would look like. Ask a second student to demonstrate a descending sort.

IRCO Simulation-Optional

- Distribute the IRCO Step-by-Step handout (*JMOD6-2-2*) to students while explaining the importance of a computerized customer database.
- Conduct a classroom discussion about when a business might want to sort information in a database. Guide students into developing different scenarios when businesses such as IRCO might need to sort information in a database. One example is to find the customers who have purchased the most, in descending order. Another example would be to list catalog items in ascending order so that you could find them quickly in a big inventory. Record the responses of the students on the board.
- Have students sort their databases in additional ways and print one copy in list view for each:
  Last Name ascending
  ZIP ascending
  Last Name descending

Part 2 – Hands-On Computer Activity

4. Instruct the students to pair off as they were in the previous lesson and to complete each of the three parts of the handout (*JMOD6-2-1*). Observe the progress of each pair and offer help if needed.
5. Conduct a classroom discussion about why you might want to sort information in a database. Guide students into developing different scenarios based on the different content of their databases. Record the responses of the students on the board.
6. Have students sort their databases in three additional ways and print one copy in list view for each.

HOT Activities:

1. Ask each pair of students to review the steps that they think are necessary to design a useful database and prepare a written list of these steps. When finished, have a group of students compile all of the lists to develop the ultimate classroom guide for display purposes.

Assessment methods:

- Instructor review and evaluation of the printouts the students submit.
- Observation of students by instructor as they are involved in classroom activities and discussion.
- Student assessment of partners in review of design steps for databases.
- Self-assessment by students, as practice continues in sorting.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 6-2

Document each of the three steps as you continue to manage your database:

Part A

- Open *LES 6-2.* How many records are there in your database now?

Part B

- Add 12 new records to your database. List the content for one field in every record on the back of this sheet.

Part C

- Sort the database using one field in ascending order. Which field did you choose?

- Save as *LES 6-3.*
- Make sure your database is in list view.
- Print one copy.

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IRCO STEP-BY-STEP HANDOUT
Lesson 6-2

Part A

Ten more customers returned CDs to IRCO today. Add the names of these customers to your database.

- Open *LES 6-2.*

Part B

- Add these names to your database:

CONFIDENTIAL IRCO DATA

Bill Bonneywell 872 4th Street Snohomish, WA 98944	Kirk Yeager 672 5th Avenue New York, NY 10012	Manny Motors 192 State Street Anacortes, WA 98244
Durwood Merryweather 782 Overlake Avenue Bellevue, Wa 98007	Mary Walker 782 Phinney Avenue Seattle, WA 98117	Nancy Wood 9021 Birdseye View Way Oak Harbor, WA 98222
Arnold Ziffle 900 Butler Drive Redmond, WA 98132	Beverly Bayne 8903 Woodside Drive Redwood City, CA 94204	Katie Adelman 9238 Tulip Lane Flower Mound, TX 63445
John Smith 890 Plymouth Lane Nashville, TN 53422		

Part C

- Sort the database by ZIP so the highest numbered ZIP is on top.
- Save as *LES 6-3.*
- Make sure your database is in list view.
- Print one copy.

Developing Databases

LESSON 6-3: Create and Modify Tables *Approx. time: 1 class*

Lesson overview:

The purpose of this lesson is to introduce the concept of designing and modifying a table in a relational database. While the first two lessons of this module were designed to be completed easily on a flat database (like Microsoft Works), the remaining lessons will require the use of a relational database (like Microsoft Access). Students will create a table within a new database and practice their design skills.

Students will demonstrate the ability to:

1. Create a table. (T/DB)
2. Modify the design of a table. (T/DB)
3. Analyze/synthesize information and validate for accuracy and completeness. (F/ANL, ES-7)
4. Document information that explains details of database design. (T/DM, ES-8)
5. Work effectively as a team member. (ES-10)

Prerequisites: Lessons 6-1 and 6-2

Content required:

1) Explanation of relational databases
2) Create a new database and table in Table Design:
    a) Add Field Names
    b) Switch to Datasheet view
3) Input information
4) Modify the table design:
    a) Add additional fields and information

Resources:

Manuals for the database software program being used

Materials checklist:

- ✓ Transparency and Step-by-Step handout (*JMOD6-3-1*) for each student
- ✓ Student index cards from Lesson 6-1
- ✓ Sample IRCO Step-by-Step handout (*JMOD6-3-2*)
- ✓ Recipe Book which would contain some of the favorite foods listed on the student index cards

Equipment checklist:

- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Remind the students of the index cards which they prepared in the first lesson and display these in full view of the class. Explain to the students that the concept of a relational database is based on separate groups of data being related by one or more fields. While in one group of data, it is possible to access this other group of data through the common field. Using the index cards as one group of data with the common field being 'favorite food', demonstrate how a record (the recipe for that favorite food) can be accessed in the other group of data (the book of recipes).
2. Repeat the demonstration a few times as you reiterate the concept and point out the distinction between a database (the whole) and a table (each group).
3. Ask the students to think about and share with the class ways that this increased access to information would be useful. See if they also can come up with any other examples of relational databases that they might have experienced without realizing it at the time (save index cards for Lesson 6-7).

Part 2 – Hands-On Computer Activity

4. Distribute the Step-by-Step handout (*JMOD6-3-1*) to the student pairs and instruct them to follow the instructions for creating a relational database.
5. Ask the students to have you review their table designs in Part B and Part D before continuing to the next sections. Observe their progress and verify that Parts B and D include the minimum information listed below (it's okay for field names to vary from group to group).

IRCO Simulation-Optional

- Distribute the IRCO Step-by-Step handout (*JMOD6-3-2*) to the students and instruct them to follow the instructions for creating a relational database.
- Ask the students to have you review their table designs in Part B and Part D before continuing to the next sections. Details provided below:

Field Name	***Data Type***	***Size***	***Description***
Fname	Text	12	
Lname	Text	10	
Branch	Number	Integer	
City	Text	16	
StartDate	Date/Time		Short Date

Field Name	***Data Type***	***Size***	***Description***
EmpNumber	Number	Integer	
HourlyPay	Currency		Standard

HOT Activities:

1. Since one of the fundamental rules of computer data is "Only enter it once, but use it many times", have students re-examine the index card data table. Assign them the task of identifying a new field that could be easily added and that would link it to another data table. Ask each student to prepare a written description of what the field and the data table would be. Provide time for a discussion so that students can then offer suggested organization ideas.
2. With the class divided into new groups of approximately three students, have each group design and create a new relational database based on other students' roles, such as classes, course descriptions, instructors, extra-curricular activities, etc. Each new database should be saved under the name CENTER. Require that each database include three data tables, one of which must be 'students.' Instruct students to prepare a written document of their designs of each table, showing the common field in all three data tables and producing one report for each table after entering their data in the database.

Assessment methods:

- Observation of students by instructor as activities are completed.
- Review and feedback provided by instructor of printouts submitted by students.
- Student assessment of accuracy of new fields to data tables and comparison of designs of data tables developed by groups.
- Review and evaluation of database designs prepared by student groups.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 6-3

Part A
- Using a relational database application software program, create a database of information about students in your class. Call it **ROSTER.**

Part B
- Complete the design of a table in the chart using information about 5 classmates and then create it:

Field Name	***Data Type***	***Field Size***	***Description***

- Save this table design with the name of **MYCLASS.**

Part C
- Add the information for each classmate into the table.
- Save this information.

Part D
Add two additional fields, such as favorite class, commuting distance, or least-liked vegetable.

- Complete the chart with the additions to the MYCLASS table based on the new information.

Field Name	***Data Type***	***Size***	***Description***

Part E
- Add the new information (in bold) for each classmate into the table:
- Save and print one copy.

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IRCO STEP-BY-STEP HANDOUT
Lesson 6-3

Part A

IRCO has decided to get organized and create a database of employees, customers, inventory and, as time goes on, other company operations. IRCO management has decided to begin with company employees.

- Using a relational database application software program, create a database. Call it **IRCO.**

Part B

- Complete the design of a table in the chart using the information below and then create it:

Field Name	*Data Type*	*Field Size*	*Description*

- Save this table design with the name of **EMPLOYEES.**

Part C

- Add the following information for each person into the table:

CONFIDENTIAL IRCO DATA

Robert	Hanson	17	Seattle	3/5/97
Abner	Cook	13	Seattle	5/6/98
Roberta	Hansen	81	Spokane	1/2/98
William	Wood	17	Seattle	8/9/96
Mary	Jones	13	Seattle	3/6/97

- Save this information.

Part D

The company has decided that it also wants to keep track of the assigned employee number as well as the rate of pay per hour.

- Complete the chart with the additions to the EMPLOYEES table based on the new information below:

Field Name	***Data Type***	***Size***	***Description***

Part E

- Add the new information (in bold) for each employee into the table:

CONFIDENTIAL IRCO DATA

Robert	Hanson	**460**	**7.75**
Abner	Cook	**324**	**7.25**
Roberta	Hansen	**367**	**8.90**
William	Wood	**195**	**8.90**
Mary	Jones	**354**	**7.75**

- Save and print one copy.

Developing Databases

LESSON 6-4: Searching Tables *Approx. time: 1 class*

Lesson overview:
Using the new database from the previous lesson, students will continue to develop the relational database by creating a new table, adding records to the table, and then practicing a search technique in the table to find specific record.

Students will demonstrate the ability to:
1. Open an existing database and create tables. (T/DB)
2. Work together in teams to complete tasks. (ES-8, ES-10)
3. Search a table to locate specific records. (T/DB)
4. Identify relevant sources of information and recognize the audience for the project. (F/F&CS)

Prerequisites: Lessons 6-1 through 6-3

Content required:
1) Create a new table
2) Add records to the database
3) Search to find specific records in the database

Resources:
Manuals for database software program being used

Materials checklist:
- ✓ Transparency and Step-by-Step handout (*JMOD6-4-1*) for each student
- ✓ Sample of IRCO Simulation handout (*JMOD6-4-2*)

Equipment checklist:
- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:

Part 1 - Preparatory Activity
1. Review the concepts of a relational database and make sure that the students have completed a table in a relational database.
2. Distribute the Step-by-Step handout (*JMOD6-4-1*) and explain that today's lesson will result in the creation of a new table and the use of the search feature. Remind the students to include a common element in the new table. The students should recognize that each table must have one common field and that's how they are related in the relational database. Continue to re-

enforce the relational concepts by asking additional questions about how this could be useful or why anyone would design a database like this.

3. Have the students, working in pairs, begin on Part A and identify the rest of the fields for their table design. Ask them to review each partner's chart before they continue to the next section.

IRCO Simulation-Optional

- Distribute the IRCO Step-by-Step handout (*JMOD6-4-2*) and instruct the students to review the data that will comprise the new table in the IRCO database listed in Part B. Ask the students if they notice any common elements in the new Equipment table and the Employee table. The students should recognize that each table has a "branch" field and that's how they are related in the relational database of IRCO! Continue to re-enforce the relational concepts by asking additional questions about how this could be useful or why anyone would design a database like this.
- Have the student teams begin on Part A and identify the rest of the fields for their table design. Ask to review each team's chart before they continue to the next section. Fields should be similar to the following example:

Field Name	Date Type	Size	Description
Branch	Number	Integer	
Item	Text	12	
Model	Text	15	
Brand	Text	10	
Cost	Currency		Standard
Purchased	Date/Time		Short Date
Warr	Yes/No		Set Default to Yes
Serial	Text	12	

Part 2 – Hands-On Computer Activity

4. Monitor student progress as they continue through each section of the handout.
5. Remind the students to refer to the online Help if they need some hints on how to conduct a search.

HOT Activities:

1. Ask the students for examples of when they think the administration would want to find certain records in their table. As an answer is presented, follow by asking another student to describe how the search would be accomplished. Continue to challenge the students for situations until everyone has had a chance to contribute an answer.
2. Allow students to return to their larger groups that were formed at the end of the previous lesson. Have the groups analyze their three data tables created in the CENTER database and prepare a written description of three different

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types of searches that could be made for each table – in other words, nine different searches – with an explanation of how each search would result in valuable information.

Assessment methods:

- Review and evaluation by instructor of printouts submitted by students.
- Observation by instructor of students participating in discussions.
- Evaluation made by instructor of quality of group results.

Instructor evaluation and comments for improvement:

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STEP-BY-STEP HANDOUT
Lesson 6-4

Part A

Using the ROSTER database, add a new table for class scheduling.

- Complete the chart with the design for the new table:

Field Name	Date Type	Size	Description

- Open the ROSTER database, create this new table, and save it as **CLASSES.**

Part B

- Add the class schedule information to the table:
- Save your work.

Part C

- Choose a word that you know is in one of your records. Write the word in the space below:
- Describe the steps you would take to find one record with the word 'computers' in it:
- What is its record number in the table?
- Print the entire table.

IRCO STEP-BY-STEP HANDOUT
Lesson 6-4

Part A

IRCO has decided to add another table to its database. This one will be designed to help control the inventory of office equipment throughout the company.

- Using the information below, complete the chart with the design of the new table:

Field Name	Date Type	Size	Description

- Open the IRCO database, create this new table, and save it as **EQUIPMENT.**

Part B

- Add the following information to the table:

IRCO Inventory List

Branch	Item	Model	Brand	Cost	Purchased	Warr	Serial
17	Monitor	P50	Compaq	465.00	4/1/98	Yes	897624
13	CPU	Deskpro	Compaq	1345.00	3/25/97	No	897823
81	Monitor	P50	Compaq	455.00	8/8/96	Yes	432423
17	Printer	IV SI	HP	2344.00	4/1/98	Yes	4343423
13	Scanner	Model 2	HP	645.00	5/5/97	Yes	1237653
17	Monitor	XT-50	Acme	199.00	5/6/98	No	BQ90034
13	CPU	Deskpro	Compaq	1345.00	5/7/98	Yes	234323
81	CPU	XJ-56	Dell	1155.00	9/2/98	Yes	654234Y
81	Scanner	Model 2	HP	645.00	3/3/96	Yes	3454346
81	Printer	IV SI	HP	2344.00	2/5/97	Yes	7656345
13	Printer	III SI	HP	3450.00	2/1/96	No	2345434

- Save your work.

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Part C

- Describe the steps you would take to find the record with the brand name of Acme:

- What is its record number in the table?

- Print the entire table.

Developing Databases

LESSON 6-5: Forms *Approx. time: 1 class*

Lesson overview:

Many times seeing all of the data in the database is not necessary to accomplish the task. For this purpose, understanding the use of forms is important. Working again with their database, students will create and then modify a form view from the data sheet (table) view. They will then switch between data sheet view and form view and add data in form view. Afterwards the students will print in both form view and data sheet view.

Students will demonstrate the ability to:

1. Open an existing database. (T/DB)
2. Create and modify a simple form. (T/DB)
3. Enter data using a form. (T/DB)
4. Summarize, communicate, and document information to share with class. (F/ANL, ES-4, ES-7)
5. Work effectively in groups. (ES-10)

Prerequisites: Lessons 6-1 through 6-4

Content required:

1) Creating a form:
   a) Convert to form view
   b) Modify the form
2) Switching views:
   a) Form view
   b) Data sheet view
3) Adding records to the database in form view
4) Printing:

Resources:

Manuals for database software program being used

Materials checklist:

- ✓ Transparency and Step-by-Step handout (*JMOD6-5-1*) for each student
- ✓ Sample of IRCO Simulation Step-by-Step handout (*JMOD6-5-2*)

Equipment checklist:

- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:

Part 1 – Preparatory Activity

1. Review the accomplishments in the previous lesson and verify that each pair of students has an up-to-date database.
2. Distribute the Step-by-Step handout (*JMOD6-5-1*), while explaining that the purpose of this lesson is to utilize the form feature. Ask the students if looking at the tables with all of the records is sometimes confusing. Point out that there is a way to see only one record at a time, using the form view.

IRCO Simulation-Optional

- Distribute the IRCO Simulation Step-by-Step handout (*JMOD6-5-2*), while explaining that the purpose of this lesson is to utilize the form feature. Ask the students if looking at the tables with all of the records is sometimes confusing. Point out that there is a way to see only one record at a time, using the form view.

Part 2 – Hands-On Computer Activity

1. Using the handout, walk the students through the creation of a form view in Part A. Encourage them to move from record to record. Solicit their reactions to the new function.
2. Monitor the students' progress as they continue through each section and, offer assistance if necessary.

HOT Activities:

1. Upon completion of the exercise by all the students, conduct a round-table discussion of the advantages or disadvantages of the use of this view of a database. Ask students to support their comments with examples.
2. Assign each pair of students the task to research a Web site that uses a form view. Instruct students to print out a copy of the form, to analyze the ways that data entry is improved by the form, and then to prepare a written summary of their findings.
3. Using the groups formed to develop the CENTER databases, have students create a form view in each one of the three tables and print an example.

Assessment methods:

- Instructor review and evaluation of printouts submitted by students.
- Instructor observation of round-table discussion participation by students.
- Self-assessment by students of progress and understanding of databases.
- Comparison of students' group results and assessment of results.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 6-5

Part A
Sometimes it's preferable to see only one record at a time in a database file. Here's how to change the MYCLASS table to a form view (view one record at a time):

- ➢ Open the **ROSTER** database.
- ➢ Click on the FORMS tab and choose NEW.
- ➢ Choose FORM WIZZARD.
- ➢ Under TABLES/QUERIES make sure MYCLASS is chosen.
- ➢ Use the > to move each field from AVAILABLE FIELD to SELECTED FIELD.
- ➢ Next. Choose COLUMNAR.
- ➢ Next. Under style choose STANDARD.
- ➢ Finish.

Part B
Once you have created a form view, it is easy to move from record to record. The advantage is that you have to view only one record at a time.

- ➢ Use the arrowhead buttons on the form scroll bar (at the bottom of the form) to scroll from one form to another.

Part C
It's easy to modify the form once you have created it.

- ➢ Make the following changes to the MYCLASS form:
    - Font size of one column to 12
    - Font size of all other data to 10
    - Size of each field name to 11
    - Bold one record for data entry. You may have to adjust the size of some fields to accommodate the larger sizes

Part D
Some people prefer to enter data in form view rather than in the datasheet view.

- ➢ Enter the information for another classmate into your MYCLASS table *while you are in form view*.
- ➢ Save.

Part E
- ➢ Make sure you are in form view.
- ➢ Print only the last record.
- ➢ Change to datasheet view.
- ➢ Print the entire table.

IRCO STEP-BY-STEP HANDOUT
Lesson 6-5

Part A

Sometimes it's preferable to see only one record at a time in a database file. Here's how to change the EQUIPMENT table to a form view (view one record at a time):

- Open the **IRCO** database.
- Click on the FORMS tab and choose NEW.
- Choose FORM WIZZARD.
- Under TABLES/QUERIES make sure EQUIPMENT is chosen.
- Use the > to move each field from AVAILABLE FIELD to SELECTED FIELD.
- Next.
- Choose COLUMNAR.
- Next.
- Under style choose STANDARD.
- Finish.

Part B

Once you have created a form view, it is easy to move from record to record. The advantage is that you have to view only one record at a time.

- Use the arrowhead buttons on the form scroll bar (at the bottom of the form) to scroll from one form to another.

Part C

It's easy to modify the form once you have created it.

- Make the following changes to the EQUIPMENT form:

  Font size of COST data to 12

  Font size of all other data to 10

  Size of each field name to 11

  Bold each ITEM data entry. You may have to adjust the size of some fields to accommodate the larger sizes

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Part D

Some people prefer to enter data in form view rather than in the datasheet view.

- Enter the following information into your EQUIPMENT table *while you are in form view*:

IRCO Inventory List

Branch	Item	Model	Brand	Cost	Purchased	Warr	Serial
13	Printer	Inkjet	Cannon	195.00	7/6/98	Yes	199822
17	Printer	Inkjet	Cannon	195.00	7/6/98	Yes	199823
13	Printer	Dot Matrix	Epson	168.00	7/6/98	Yes	E490211
81	Printer	Inkjet	Cannon	195.00	7/6/98	Yes	199824
17	CPU	Deskpro	Compaq	1345.00	5/7/98	Yes	234325
17	CPU	Deskpro	Compaq	1345.00	5/7/98	Yes	234327
17	Printer	Dot Matrix	Epson	168.00	7/6/98	Yes	E490213
13	Printer	Dot Matrix	Epson	168.00	7/6/98	Yes	E490215

- Save.

Part E

- Make sure you are in form view.
- Print only the ACME record.
- Change to datasheet view.
- Print the entire table.

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LESSON 6-6: Using Forms to Enter Data *Approx. time: 1 class*

Lesson overview:

It's now time to develop a table within a database. Students will design a form to enter information and to practice sorting this new data before printing out their results.

Students will demonstrate the ability to:

1. Design simple databases. (T/DB)
2. Create a form to enter data. (T/DB, ES-4)
3. Analyze design and make recommendations for improvements. (F/ANL, ES-12)
4. Communicate recommendations with supporting documentation. (F/ANL, ES-7)

Prerequisites: Lessons 6-1 through 6-5

Content required:

1) Design the database
2) Create the form
3) Add information into the form
4) Sort the data
5) Print

Resources:

Manuals for database software program being used

Materials checklist:

- ✓ Transparency and Step-by-Step handout (*JMOD6-6-1*) for each student
- ✓ Sample of IRCO Simulation Step-by-Step handout (*JMOD6-6-2*)

Equipment checklist:

- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:

Part 1 - Introductory Discussion

1. Explain that the purpose of today's lesson is to develop a form showing a new data table in a database and to discuss the purpose of the database.
2. Have students develop another set of information that could be included in their ROSTER database for a new table (Be sure that there are a least 6 – 10 records that could be entered.). Ask the students to identify which fields will

be necessary and record their answers on the board. Ask which one field would be required? When the correct answer is given (a common one with ROSTER), have another student explain why.

3. Talk about the need for field names on the form so that they are easily understood, as well as the fact that the form design should be attractive.
4. Distribute the Step-by-Step handout (*JMOD6-6-1*) to each student.

IRCO Simulation-Optional

- Explain that the students will develop a customer table within the IRCO database during these exercises.
- Distribute the IRCO Simulation Step-by-Step handout (*JMOD6-6-2*).

Part 2 – Hands-On Computer Activity

5. Allow time for each pair of students to complete all four parts of the exercise.
6. Suggest to the teams that they divide up the data so that each team member has the opportunity to enter information.
7. Monitor the progress of the students and offer help when needed.

HOT Activities:

8. When students have completed the exercises, ask them to evaluate their form design. Have them print out a copy of the form and then make written suggestions on the printout as to how it might be improved now that they have tried it out. Provide time for the teams to modify their form and then display printed copies of each team's form for the class to review.
9. Have students research the topic of screen form design and develop a written checklist of considerations for designing the best data entry form. Encourage them to check Web sites that they may have used and observe what they like or dislike about the layout of the screen. Printed documentation of these Web sites can be used in their reports to demonstrate good and bad forms.
10. Once the research on form design is complete, have a student or students compile a top-ten list from all of the checklists and present it to the class.
11. Using the top-ten list of form design considerations, have each group of students analyze the forms developed for the three tables in their CENTER database. Instruct each group to print out copies of "Before" and "After" for each of the three forms and provide a written explanation of how and why the changes were made.

Assessment methods:

- Instructor review and evaluation of printouts submitted by students.
- Self-assessment by students of database design.
- Student evaluation of design considerations to develop top ten list.
- Observation by instructor of student participation in discussions and activities.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 6-6

Part A

- In the space below, sketch a form design for a new data table in your database.

- Create a form in your database.

- Save it as **MYFORM.**

Part B

- Enter the information into your database while you are in form view.
- Save.

Part C

- Sort the list several different ways until you are satisfied with the best organization of the content. List the ways below that you tried:

Part D

- Print.

IRCO STEP-BY-STEP HANDOUT
Lesson 6-6

Part A

IRCO has decided to create a database of its customers. The database will need to contain our branch number that serves the customer, as well as the usual addresses, phone numbers, fax numbers, and the key person we should contact at the business. It's important that the field name you use to designate our branch is the same as in the other parts of the IRCO database.

➢ In the space below, sketch a form design of the customer database for IRCO:

➢ Create this form in your IRCO database.

➢ Save it as **CUSTOMERS.**

Part B

➢ Enter the following information into your CUSTOMERS database while you are in form view.

Customer:	Sound Express #1	Customer:	Sound Express #3
Key Contact:	Russell Hanson	Key Contact:	Naomi Johnson
Address:	7836 Market Street	Address:	7436 Southcenter Blvd.
City:	Seattle	City:	Seattle
State:	WA	State:	WA
ZIP:	98117	ZIP:	98168
Phone:	206-555-1245	Phone:	206-555-9090
Fax:	206-555-1246	Fax:	206-555-9091
Branch:	17	Branch:	13

Customer:	Golden Sounds	Customer:	A Country Experience
Key Contact:	Mary Fitzpatrick	Key Contact:	Bo Poteet
Address:	9002 8th Street	Address:	653 Front Street
City:	Spokane	City:	Billings
State:	WA	State:	MT
ZIP:	99008	ZIP:	97026
Phone:	509-555-9162	Phone:	406-555-8989
Fax:	509-555-2765	Fax:	406-555-8888
Branch:	81	Branch:	81
Customer:	Sound Express #5	Customer:	Frank's Music Store
Key Contact:	MacKenzi Wood	Key Contact:	Frank Thomas
Address:	678 Northgate Way	Address:	8909 NW 85th Street
City:	Seattle	City:	Seattle
State:	WA	State:	WA
ZIP:	98133	ZIP:	98103
Phone:	206-555-9000	Phone:	206-555-1299
Fax:	206-555-9001	Fax:	206-555-1300
Branch:	17	Branch:	17
Customer:	Alternate Expressions	Customer:	Rock 'n Roll Forever
Key Contact:	E. J. Julliette	Key Contact:	Ralph Jones
Address:	871 First Avenue	Address:	900 8th Avenue
City:	Seattle	City:	Lewiston
State:	WA	State:	ID
ZIP:	98103	ZIP:	83078
Phone:	206-555-0009	Phone:	208-555-2775
Fax:	206-555-0008	Fax:	208-555-7887
Branch:	17	Branch:	81
Customer:	A Blue Day	Customer:	Sound Express #12
Key Contact:	Arlo McCoullah	Key Contact:	Melissa Walker
Address:	835 15th Avenue South	Address:	409 198th Street South
City:	Seattle	City:	Kent
State:	WA	State:	WA
ZIP:	98244	ZIP:	98166
Phone:	206-555-9999	Phone:	425-555-5656
Fax:	206-555-7777	Fax:	425-555-5655
Branch:	13	Branch:	13

- Save

Part C

- Sort the list so it is in order by customer name.
- Sort the list so it is in order by branch.

Part D

- Sort the list so it is in order by ZIP.
- Print.

Developing Databases

LESSON 6-7: Query This *Approx. time: 1 class*

Lesson overview:
In this lesson students will add more records to their table and then perform a query.

Students will demonstrate the ability to:
1. Create and modify simple queries. (T/DB)
2. Print results of a simple query. (T/DB, ES-8)
3. Analyze relationships between parts and wholes. (F/ANL)
4. Ask for clarification when further information is required to solve problems and accomplish tasks. (ES-6, ES-12)
5. Work collaboratively to achieve team goals. (F/TW, ES-10)

Prerequisites Lessons 6-1 through 6-6

Content required:
1) Open existing database
2) Add additional records
3) Query the database
4) Print

Resources:
Manuals for database software program being used

Materials checklist:
- ✓ Student index cards from Lesson 6-1
- ✓ Transparency and Step-by-Step handout (*JMOD6-7-1*) for each student
- ✓ Sample of IRCO Simulation Step-by-Step handout *(JMOD6-7-2)*

Equipment checklist:
- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Classroom Discussion
1. Explain the concept of query (isolating a group of records). Using the student index cards, demonstrate how a group can be isolated by the common value in one field. Continue the demonstration to illustrate how a second query of the isolated group narrows the target even further (for example, not everyone whose favorite color is red, but only students who like red and pizza!).

2. Distribute the Step-by-Step handout (*JMOD6-7-1*) and allow time for the students to ask questions before starting.
3. Guide the students in the development of at least 10 new records that they can enter into the data table created in the previous lesson. List the records on the board if necessary for their use during the exercises.

IRCO Simulation-Optional

As each department at IRCO finds out about the new database, it seems they all have some type of request for information. To respond to these requests, students will add more records to the Customer table and then perform queries for Marketing and Accounting.

- Distribute the IRCO Simulation Step-by-Step handout (*JMOD6-7-2*).

Part 2 – Hands-On Computer Activity

4. Allow the pairs of students to complete the four parts of the exercises.
5. Monitor their progress and provide help when required.

HOT Activities:

1. After all of the teams are finished with the exercise, conduct a practice session of "CAN YOU QUERY THIS?" Divide all of the teams between Group 1 and Group 2. Assign each team in Group 1 and Group 2 the task of inventing two situations that could be answered by specific information for one of the databases. Start with teams of Group 1 and have them pose their situations to the teams of Group 2. Group 2 must devise an accurate query to receive a point for each situation. Repeat the process with Group 2 providing the situations. The group with the highest total at the end should be rewarded!
2. Allow the students to return to their original groups that were responsible for the development of the CENTER database. Provide time also for the members of these groups to practice the query session.

Assessment methods:

- Instructor review and evaluation of printouts submitted by students.
- Observation of student participation in query exercise and group process.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 6-7

Part A
- ➢ Please add half of the new records to your database in form view:

Part B
- ➢ Please add the other half of the records to your database in data sheet view:
- ➢ Save

Which of the two methods used to enter your data did you like best and why?

Part C
- ➢ Devise a ***query*** to select a subset of your database. Describe which information you used to make you query below:

- ➢ Print a report showing the results of this query.

Part D
- ➢ Modify your query. Describe the steps that you used below for changing the query:

- ➢ Print a report of this new query.

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IRCO STEP-BY-STEP HANDOUT
Lesson 6-7

Part A

IRCO's Customer Service Department has several more new customers to add to the database.

- Please add the following 6 records to your CUSTOMERS database in form view:

Customer:	Sam's Sounds	Customer:	Katz Place
Key Contact:	Sam Crawford	Key Contact:	Kat Nguyen
Address:	7387 99th Street West	Address:	3902 89th Avenue NE
City:	Spokane	City:	Seattle
State:	WA	State:	WA
ZIP:	99103	ZIP:	98113
Phone:	509-555-1755	Phone:	206-555-8222
Fax:	509-555-1855	Fax:	206-555-8822
Branch:	81	Branch:	17
Customer:	Sound Express #4	Customer:	Sound Express #10
Key Contact:	Colin Williams	Key Contact:	Robert Li
Address:	200 Fifth Avenue	Address:	3091 South 176th Avenue
City:	Seattle	City:	Des Moines
State:	WA	State:	WA
ZIP:	98104	ZIP:	98188
Phone:	206-555-8333	Phone:	206-555-1000
Fax:	206-555-3333	Fax:	206-555-1001
Branch:	17	Branch:	13
Customer:	Lynnwood Lyrics	Customer:	CD Express
Key Contact:	Brian Berger	Key Contact:	Marian Frisbee
Address:	8903 188th Street North	Address:	120 Sand Hill Road
City:	Lynnwood	City:	Cheney
State:	WA	State:	WA
ZIP:	98022	ZIP:	99422
Phone:	206-555-1784	Phone:	509-555-5090
Fax:	206-555-1884	Fax:	509-555-5091
Branch:	17	Branch:	81

Part B

- Please add the following 4 records to your CUSTOMERS database in data sheet view:

Customer	Key Contact	Address	City	State	ZIP	Phone	Fax	Branch
Elvis & More	Nancy Wood	8937 Seaview Way	Seattle	WA	98117	206-555-2983	206-555-9000	17
Country Cousins	Rowdy Hayes	366 Brady Way	Renton	WA	98115	206-555-8991	206-555-8992	13
The Blues Bros.	Rodney Blue	9124 320th Ave. S.	Federal Way	WA	98198	206-555-9002	206-555-9003	13
Silver Disks	Betty Blue	736 148th Ave. SE	Bellevue	WA	98106	425-555-9003	425-555-9004	17

- Save

Part C

IRCO's Marketing Department is very impressed with the computerization of its customer list and would like to see how many of the Sound Express stores up in Seattle are already on our customer list.

- Devise a ***query*** to select all customers in Seattle.
- Modify that query to include only Sound Express stores in Seattle.
- Print.

Part D

Accounting has realized that all of the customers in Branch 81 were charged a Washington State tax. That would be okay if all of the customers were located in Washington State.

- Devise a query and print the report for Accounting that lets them know whether or not they have a problem.

LESSON 6-8: You're On Report

Approx. time: 1 class

Lesson overview:
Students get an opportunity in this lesson to prepare customized reports.

Students will demonstrate the ability to:
1. Create and modify a report. (T/DB)
2. Customize a report for different audiences. (T/DB, ES-9)
3. Listen effectively to determine task requirements. (ES-5)
4. Complete tasks in accordance with standard and schedule. (F/TM)
5. Validate information for accuracy and completeness. (F/ANL)

Prerequisites: Lessons 6-1 through 6-7.

Content required:
1) Create a report from an existing data sheet
2) Report modification
3) Customized reports

Resources:
Manual for database software program being used

Materials checklist:
- ✓ Overhead transparency of a plain table printout (the printout of a completed Assignment 6-6 that was used with Lesson 6-7 would work well here).
- ✓ Overhead transparency of that plain table printout, reproduced as a report (so students can be shown the difference).
- ✓ Sample of IRCO Simulation Step-by-Step handout (*JMOD6-8-1*)

Equipment checklist:
- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:

Part 1 - Ten Minutes/Classroom Discussion
1. Use the overhead projector to display a plain printout of a data table (the transparency of a completed assignment in Lesson 6-6 would work just fine).
2. Explain that the printout is plain, boring, and has no statistics (totals, for instance). While it gets the job done, it isn't snappy.

3. Use the overhead projector to display the same data table printed as a report. Ask students to describe the differences. They will easily be able to describe the advantages of a report (even if they don't know how to make one yet).
4. Discuss with the students the reasons they may sometimes want to modify an existing report. Reasons could include different audiences, missing information, a wish to keep some information secret, or simply a desire to make the report look nicer.
5. Demonstrate the use of the Report Wizard for the students. Emphasize examples of how improvements mentioned in previous steps can be easily accomplished.
6. Have students choose three reports from previous lessons that they would like to practice customizing.

IRCO Simulation-Optional

Explain to the students that, up to this point, all of the reports generated to fulfill information requests at IRCO have looked pretty boring. For the requests from Leslie, IRCO's fearless VP of Marketing, and from Jo, the Production Manager, students get an opportunity to prepare customized reports.

- Distribute the IRCO Simulation Step-by-Step handout (*JMOD6-8-1*).

Part 2 – Hands-On Activity

7. Monitor the students' progress as they complete their work.
8. It may be necessary to repeat the demonstrations of some of the techniques to the whole class if students have many problems with the report changes.

HOT Activities:

1. Have students choose one of the earlier reports using the CENTER database to analyze and identify ways to improve the appearance of the print out.
2. Instruct them to write their suggestions on the report and then use it to make the changes and print out a new and improved version.
3. Conclude by having a discussion to develop a standard report format for class projects using databases. List the suggestions for each type of standard and allow the students to vote on which ones they think are most important. Ask one or more students to prepare a document or poster listing the new standards.

Assessment methods:

- Instructor review and evaluation of printouts submitted by students.
- Student evaluation of earlier printouts for design suggestions.
- Student participation in class discussions and demonstrations.

Instructor evaluation and comments for improvement:

JMOD6-8-1

IRCO STEP-BY-STEP HANDOUT
Lesson 6-8

Part A

Leslie, the Marketing VP has a meeting with a potential new customer in just 15 minutes – and she's frantic: she needs a list of all IRCO customers to show that we're a large company, and growing. She asks you to print out a list of all of our customers. You could just print out a table of CUSTOMERS, but Leslie wonders if there's a way to make it look a little better. You tell her not to worry.

- ➢ Using report Wizard, prepare a report of customers. Include all fields and defaults.
- ➢ Print this report.

Part B

As you review the report you just prepared, you notice that it looks pretty good. It has a title, column headings, rulings, and a footer.

But on closer examination, you see that some of the customer store names and key contacts are cut off. Then you look at the phone and fax numbers and see they are, too. You decide to fix it up a little. Here's how:

- ➢ Change the report orientation to landscape from portrait.
- ➢ Go to report design.
- ➢ Change the width of the page to at least 9 inches.
- ➢ Space out the column page headers and details (use gridlines to line them up).
- ➢ Increase the width of the details that are too narrow – especially the phone and fax numbers, addresses, customer names, and key contact people.
- ➢ When you print preview, if your report is two pages, tighten up the detail band.
- ➢ Print this report.

Part C

Our company has recently purchased some additional equipment; we have also realized that some equipment was not on the inventory list.

- ➢ Please add the following items to the EQUIPMENT data table in the IRCO database. You may add the items in either form view of data sheet view:

Branch	Item	Model	Brand	Cost	Purchased	Warr	Serial
13	Desk	M-95	Acme	497.00	8/9/98	No	56323
17	Desk	M-95	Acme	497.00	8/9/98	No	56324
81	Desk	M-95	Acme	497.00	8/9/98	No	56325
13	Chair	Ch-50	Acme	138.00	8/9/98	No	7566
17	Chair	Ch-50	Acme	138.00	8/9/98	No	7567
81	Chair	Ch-50	Acme	138.00	8/9/98	No	7568
81	Monitor	P-50	Compaq	525.00	7/1/97	Yes	897599
81	Monitor	P-50	Compaq	525.00	7/1/97	Yes	897600

- ➢ Sort the data table in order of cost – the most valuable items listed first.
- ➢ Print a copy of the data table – make sure it fits on only 1 page.

Part D

Your boss, Jo Santiago, would like a copy of the inventory in report form -- however, he doesn't need all of the fields included in the report. Here is what he wants (in this order):

ITEM COST PURCHASED BRANCH

- ➢ You may use Report Wizard.
- ➢ Make the report attractive.
- ➢ Make the report fit on one page.
- ➢ Make the report in portrait layout.
- ➢ Center the title and bold it.
- ➢ Spread out the columns so the report covers most of the width of the page.
- ➢ Print a copy of the report.

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Developing Databases

LESSON 6-9: Report this Query *Approx. time: 1 class*

Lesson overview:
In this lesson students continue to practice development of queries and of different types of reports.

Students will demonstrate the ability to:
1. Print a form and a report. (T/DB)
2. Print results of a query. (T/DB)
3. Summarize and document tasks and process for completion. (F/TM, ES-7, ES-15)

Prerequisites: Lessons 6-1 through 6-8

Content required:
1) Review:
    a) Queries
    b) Forms
    c) Reports
2) Printing Queries:
    a) Forms
    b) Reports
3) More Complicated Queries:
    a) Add to an existing database
    b) Query and print forms
    c) Query and print reports

Resources:
Manuals for database software program being used

Materials checklist:
- ✓ Overhead transparencies of a plain table printout, a printed form, and a report. (OPTIONAL: Printouts from previous assignments would work fine here, as these are only intended as examples.)
- ✓ Sample of IRCO Simulation Step-by-Step handout (*JMOD6-9-1*) for each student

Equipment checklist:
- ✓ Computer for each student
- ✓ Computer display projector
- ✓ Overhead projector

Teaching strategy:

Part 1 - Review Discussion

1. Review the terms query, form, and reports.
2. Use the overhead projector to display these printout options:
   - Tables
   - Forms
   - Reports
3. Ask students to identify the situations when each of the different types of printouts would be used.
4. Take the discussion to the natural progression of printing certain queries.
5. Remind students that they have already printed queries in tabular form (in Lesson 6-7). There will be times when they will want to print a query in a tabular format and other times when they will want to print a query as a report.

IRCO Simulation-Optional

- Explain to the students that the workload of their manager, Jo, is picking up and he needs even more help managing the IRCO database.
- Distribute the IRCO Simulation Step-by-Step handout (*JMOD6-9-1*) and relate the importance of being able to help your boss out in a pinch. Have the students review the request in Part A and ask them to describe how they would devise the correct query. Record the steps involved in creating the query on the board.

Part 2 – Hands-On Computer Activity

6. Group the pairs of students and conduct an exercise to define situations for 3 different queries using the ROSTER database. Have the groups record their queries on the board for reference by all members throughout the rest of the exercise. Once the groups have developed their queries, assign each student the task of performing all of the queries and printing the results both as a tabular format and as a report.
7. Monitor the progress of the students and offer assistance when needed.

HOT Activities:

1. Working within their groups, ask students to pass around the printouts of their queries and compare their results to that of other team members. After about ten minutes for review, conclude with a short discussion allowing each group to share their conclusions.
2. Now that students have experienced the basics in the design and development of a database, ask them to examine each of the reports in their portfolios and prepare a written summary of the steps they experienced from the beginning to the end of this process. Encourage them to be as specific as possible as they identify all of the considerations along the way for both their design and then the creation on the computer.

Assessment methods:

- Observation of participation by students in group activities and class discussions.
- Instructor review and evaluation of printouts submitted by students.
- Evaluation and written feedback of student reports on basics of design and development of databases.

Instructor evaluation and comments for improvement:

IRCO STEP-BY-STEP HANDOUT
Lesson 6-9

Part A

Jo tells you that he has a meeting shortly with someone from a store called Elvis & More. He can't remember much about the business and needs to know the representative we usually deal with, the store address, and any other information we have on that store.

- Query the CUSTOMERS database and find the Elvis & More record.
- Print just that one record as a form.

Part B

Now Jo also needs a report of all the customers located in the State of Washington. Here are the fields he wants included in the report (in this order):

CITY CUSTOMER BRANCH KEY CONTACT

- Make the report fit on one page.
- Make the report in portrait layout.
- Title the report WASHINGTON CUSTOMERS.
- Center and bold the title – make the font size 25.
- Spread out the columns so the report covers most of the width of the page and looks attractive.
- Sort the records so they are in order by customer.
- Center Branch numbers under the column title.
- Print a copy of the report.

Part C

Several days ago you started working on a database of IRCO employees. On that day you just had time to get the datasheet designed and started and were able to input information on only 5 employees.

- Personnel asks that you add the following records to the EMPLOYEES database:

Fname	Lname	Branch	City	StartDate	EmpNumber	HourlyPay
Hilda	Sanchez	17	Seattle	5/9/98	524	7.75
Reggie	Lewis	13	Seattle	3/12/98	527	8.15
Angela	Briselio	81	Spokane	5/1/96	529	9.00
Lawrence	Miles	81	Spokane	4/2/98	535	7.75
Margaret	Jones	81	Spokane	1/2/99	537	10.00
Aurora	Smith	13	Seattle	2/2/97	539	9.50
Andrew	Hansen	17	Seattle	4/9/99	541	7.75
Zachery	Cook	17	Seattle	9/9/99	545	8.15
Donald	Hansen	13	Seattle	6/9/96	555	10.15
Hector	Rodriguez	17	Seattle	3/12/98	531	8.25
Scarlett	Whitehorse	17	Seattle	3/9/97	557	9.00
Durwood	Tritt	81	Spokane	8/1/98	559	8.75
Beverly	Jones	81	Spokane	7/14/96	561	8.75
William	Williams	81	Spokane	4/29/97	563	8.75
Darwin	Manwell	13	Seattle	8/15/97	565	10.00

Part D

- Query the EMPLOYEES datasheet and locate the employee with the last name of Sanchez and print that record as a form.

Part E

- Query the EMPLOYEES datasheet and locate all employees who work in Spokane.
- Print an attractive report of those employees; include all fields.
- Use a Corporate Title.
- Make sure the title is centered.
- Make sure the report fits on one page -- but that it uses most of the page.
- Title the report SPOKANE EMPLOYEES.
- Set up the report in landscape orientation.
- Sort by hourly pay – the employee who makes the most should be on top.
- Center the employee numbers under the column heading.
- Center the branch numbers under the column heading.

Part F

- Query the EMPLOYEES datasheet and locate all employees who work in Seattle and who have employee numbers less than 540.

- Print an attractive report of those employees. Include these fields (in this order):

Lname Fname EmpNumber Branch City

- Make sure the title is centered.
- Title the report SEATTLE EMPLOYEES.
- Use a Casual title.
- Make sure the report fits on one page, but that it uses most of the page.
- Use portrait orientation for the report.

Developing Databases

LESSON 6-10: A New Database *Approx. time: 1 class*

Lesson overview:
For the final class, students are given the opportunity to demonstrate not only their skills in database design and development but also their ability to complete an assignment according to the directions provided.

Students will demonstrate the ability to:

1. Follow directions to complete task. (ES-4)
2. Ask for clarification if further information is required. (ES-6)
3. Design and develop a relational database. (T/DB)
4. Add, delete, and modify records. (T/DB)
5. Search a table and sort data. (T/DB)
6. Create and modify a form. (T/DB)
7. Print a form, report, and results of a query. (T/DB)
8. Stay on a task until it is completed. (F/TM, ES-15)
9. Summarize and communicate information in written documentation. (F/ANL, ES-7)

Prerequisites: Lessons 6-1 through 6-9

Content required:

1) Review:
   a) Parts of a database
   b) Steps in designing a database
   c) Creating correct and descriptive field names
   d) Database terminology
   e) Uses for databases in business
2) The new database assignment:
   a) Desired outcome
   b) Design process
   c) Input data
   d) Sort
   e) Query
   f) Print results

Resources:
Manuals for database software program being used

Materials checklist:

✓ Handout developed by instructor describing database parameters
✓ Sample IRCO Simulation Step-by-Step handout (*JMOD6-10-1*)
✓ Sample IRCO Simulation handout of IRCO Artists (*JMOD6-10-2*)

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Equipment checklist:

- ✓ Computer for each student
- ✓ Computer display databaseor
- ✓ Overhead databaseor

Teaching strategy:

Part 1 - Before Class Preparation by Instructor

1. Develop a scenario which incorporates a relational database and prepare a handout for the students outlining the details for the students to use in the development of that database. (Review the examples of the IRCO handouts for ideas.) Try to personalize the content of the data based on students' current interests. Students could develop a database of personal contents, of contents in the classroom, of companies in a particular career field or industry, of job listings in several different categories or locations, or of potential interview contacts in the community.

   For example, students could be asked to work in pairs and design a database to list all of the CDs that they own and which ones they are willing to share with others:

Step 1:	Identify data elements and design data tables.
Step 2:	Prepare a form and enter data for each table.
Step 3:	Print a customized report with contents sorted in alphabetical order.
Step 4:	Print a customized report showing only those CDs by a specific artist.

Part 2 – Review Discussion

2. Review the parts of a database. Focus especially on the terminology: field, record, row, query, database, column, report, relational database, and table. Ask the students to give a definition of each in their own words.
3. Review how databases can be used for personal benefit as well as in business. Using the overhead projector, list as many examples as the students can come up with.
4. Distribute the instructor-prepared handout and explain the parameters for the database that the student will develop.

IRCO Simulation-Optional

- Describe the following situation to the students: IRCO begins expansion and an entirely new division of the company is created. Students will apply their experience with databases to prepare the company for these important changes. They will create a completely new database for the Video division and use numerous database functions to provide the information that IRCO's management needs in order to get this part of the business up and running as soon as possible.
- Explain that the next exercise will require a number of decisions. Distribute the IRCO Simulation Step-by-Step handout (*JMOD6-10-1*) giving the students

some time to review it and ask any questions before they begin. Again, allow the students to work in pairs.

- Using the data from the IRCO Artists' list (*JMOD6-10-2*), assign students (individually or in teams) the task of setting up a new table in the IRCO database. Once the data has been entered, ask them to analyze the information for trends, categories, and current status, and to produce at least two reports for Jo to use in his presentation to management.

HOT Activities:

1. Observe the progress of the students as they complete their databases. Review the data elements in new tables to make sure that they do not stray too far from the required fields. Encourage them to consider each decision carefully as they devise the design of the tables for their new database.
2. Set up progress checks, timed or otherwise, as they continue through the exercise to give the students an opportunity for viewing the printouts created by other teams of students. Ask the students to compare and contrast their results.
3. At the end of the exercise, have each student prepare a written memo summarizing all of the steps they took to accomplish the exercise and then attach all of their reports to the memo. Instruct the students to focus especially on the process of database design which they have experienced.

Assessment methods:

- Instructor review and evaluation of database design and printouts submitted by students.
- Timely completion of all reports defined by the student handouts.
- Students' review and assessment of results, accomplished in groups.
- Outstanding examples of reports chosen for display in classroom by students and instructor.

Instructor evaluation and comments for improvement:

IRCO STEP-BY-STEP HANDOUT
Lesson 6-10

Your boss, Jo Santiago, calls you in to ask for some advice. IRCO has decided to add an entirely new division: video rental outlets. The officers of the corporation have debated whether this is a field they want to do business in, but they have decided it is a growing field with lots of possibilities. They realize there are some big players in video rentals already; that many smaller outlets have been forced out of business, and that this could be a costly endeavor. They also feel that there is a natural tie-in with the music business and the video business. And if IRCO can get these video-rental stores up and running successfully, it will be a natural progression to add music departments to the stores to sell CDs – especially our own.

Jo needs input from you on setting up the databases required to track employees, inventory at the new stores, and customers. You decide that you will create an entirely new database and *NOT* use the IRCO database for the video rental endeavor. Since the people running the outlets will be the most important aspect, you and Jo decide that you'll tackle that part of the database first.

You decide that the new database will be named VIDEO.

Part A

The first data table you need to design is for the employees in the new video outlets. You have decided that this data table will be called PERSONNEL. After looking through the typed records provided to you by Jo, you have a pretty good idea about which fields are required in the table.

- ➢ In the space provided in the box on the next page, define the data elements and design the PERSONNEL data table.

- Using relational database application software such as Microsoft Access, create a database. Call it **VIDEO**.
- Create a table design using your design in the box above. Save the table design; name it **PERSONNEL**.
- Add the following information for each person into the table.

Full Name	Lives At	City	State	ZIP	Earns Per Hour	Full or Part	Empl. No.	Store	Start Date
Brooke Simmons	812 4th Ave	Seattle	WA	98133	$8.00	Full	1001	Seattle	4/5/98
Abner Caruthers	1003 Stewart Loop	Burien	WA	98168	$8.00	Full	1009	Seattle	4/3/98
Prudence Farnsworth	3 Merriweather Place	Mercer Island	WA	98040	$7.50	Part	2044	Bellevue	4/2/98
Daryl Gritts	782 249th Pl. SE – Space 36C	Kent	WA	98031	$7.50	Part	2106	Redmond	4/5/98
Marilyn Apple	8175 Center Street	Bellevue	WA	98006	$8.00	Full	1008	Bellevue	4/4/98
Muriel Brewster	78 Lake Street	Post Falls	ID	83854	$7.00	Full	6154	Spokane	4/2/98
Durwood Fuhrman	2390 65th Avenue	Hayden Lake	ID	83835	$6.50	Part	5622	Spokane	4/1/98
Rodney Jones	5443 78th Street NW	Spokane	WA	99201	$7.50	Full	7622	Spokane	4/2/98
Quach Li	8176 Market St.	Kirkland	WA	98033	$8.00	Full	2001	Redmond	4/4/98
Ferd Goodfellow	8712 Rainier Ave. S.	Seattle	WA	98144	$7.50	Part	3055	Seattle	4/1/98

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Part B

In your new VIDEO database you will create a total of three data tables in this project. You have already created a PERSONNEL data table in Part A.

- Make sure your VIDEO database is open and create a new data table that will be called **INVENTORY**. This part of the VIDEO database will eventually contain all the videos that the stores have available to rent. Since IRCO is just starting this project, you will input only 25 videos.

- After reviewing the information below, design the data table:

- Create the INVENTORY data table and input the following records:

Gone With The Wind	1001	Bellevue
Turner and Hooch	1002	Bellevue
Good Will Hunting	1003	Redmond
Jaws	1004	Redmond
Jaws	1005	Bellevue
Jaws	1006	Seattle
Nightmare on Elm Street	1007	Spokane
ET The Extra-Terrestrial	1008	Bellevue
ET The Extra-Terrestrial	1009	Seattle
Star Wars	1010	Spokane
Star Wars	1011	Redmond
Star Wars	1012	Bellevue
Field of Dreams	1013	Spokane
The Great Escape	1014	Spokane
Private Benjamin	1015	Redmond
Bullitt	1016	Bellevue
Rocky	1017	Spokane
The Little Mermaid	1018	Seattle
Jurassic Park	1019	Seattle
The Russians are Coming	1020	Bellevue
Tootsie	1021	Bellevue
Crocodile Dundee	1022	Bellevue
Air Force One	1023	Redmond
Thelma and Louise	1024	Bellevue
Speed	1025	Spokane
Ace Ventura Pet Detective	1026	Seattle
Apollo 13	1027	Bellevue
Apollo 13	1028	Redmond
Apollo 13	1029	Seattle
Apollo 13	1030	Spokane
The Lion King	1031	Seattle
True Grit	1032	Spokane
Psycho	1033	Redmond

Part C

The final data table you will have to create for our new VIDEO database will be the members (customers) at one of your stores. Of course eventually all members will have to be added to the database, but for now we're only entering a few of the names from the Bellevue store.

- Make sure your VIDEO database is open and create a new data table that will be called **MEMBERS**. This part of the VIDEO database will eventually contain all the members at all the stores.

- Review the company needs with respect to this data table by analyzing the information below and then prepare its design:

Name	Address	Phone	Memb. No.	Store	Last Rental
Alvin Barnes	615 78th Street/Bellevue/WA 98005	425 453 9015	40001	Bellevue	1021
Gregory Grunch	9002 Skagit Key/Bellevue/WA 98006	425 747 8881	40002	Bellevue	1012
Alissa Morrison	811 Kelsey Road/Bellevue/WA 98004	425 747 8012	40003	Bellevue	1005
Charlie Chin	903 84th Ave./Medina/WA 98004	425 454 0002	40004	Bellevue	1024
Whitney Morgan	747 156th Ave/Bellevue/WA 98007	425 453 8212	40005	Bellevue	1001
Katrina Kunkel	900 Market St./Kirkland/WA 98033	425 533 9001	40006	Bellevue	1005
Jackson Johnson	178 Cedar Lane/Bellevue/WA 98005	425 444 8127	40007	Bellevue	1001
Jeremy Johnson	533 127th Place/Bellevue/WA 98005	425 453 8214	40008	Bellevue	1027
Edna Zimmerman	902 Market St./Kirkland/WA 98033	425 533 4521	40009	Bellevue	1020
Sue Adams	6541 128th Place/Bellevue/WA 98007	425 277 3676	40010	Bellevue	1001
Caryn Carmichael	8162 129th Ave SE/Bellevue/WA 98005	425 433 2190	40011	Bellevue	1016
Timothy Tom	815 Oak Lane NE/Bellevue/WA 98004	425 456 8912	40012	Bellevue	1008
Cassidy Carter	1892 423rd Ave E/North Bend/WA 98056	425 675 8144	40013	Bellevue	1001
Arnold Ziffle	891 Cedar Grove/Maple Valley/WA 98066	425 544 1209	40014	Bellevue	1022
Angus McGowan	3901 Wildwood St/Bellevue/WA 98006	425 443 9029	40015	Bellevue	1022
Joe Doe	4312 131st Ave SE/Bellevue/WA 98005	425 544 2312	40016	Bellevue	1012
MacKenzi Wood	2317 89th Place NE/Bellevue/WA 98008	425 399 2300	40017	Bellevue	1001
Taylor Nelson	18 Eastwood Drive/Bellevue/WA 98006	425 387 2390	40018	Bellevue	1024
Charlotte Zeller	312 78th Ave SW/Seattle/WA 98137	206 354 7865	10019	Bellevue	1005
Jean Knutson	891 Christmas Lane/North Bend/WA 98057	425 433 9073	40020	Bellevue	1008

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Part D

Jo brings you some more information about the employees and you decide that the PERSONNEL data table should include as much as possible.

- Define what the new fields should be after reviewing the information below.
- Open the PERSONNEL data table and add the appropriate fields.
- Add the new information for each employee.

Full Name	Phone	E-mail	Pager
Brooke Simmons	206 444 8920	Brooke17@aol.com	206-392-9001
Abner Caruthers	206 328 4782	Abner@aa.net	
Prudence Farnsworth	206 349 2128	Pfarn@aol.com	206-372-0112
Daryl Gritts	253 478 3984		
Marilyn Apple	425 349 9022	AppleM@aa.net	
Muriel Brewster	534 233 8994		206-372-1110
Durwood Fuhrman	534 589 3909	Oldcop@pc.net	
Rodney Jones	503 287 3273	RodJ@mn.com	206-444-9090
Quach Li	425 372 1911	QL44@aa.com	425-551-9006
Ferd Goodfellow	206 487 2736	GoodFred@wa.us.edu	

Part E

Jo has received several requests from Management for various printouts. Some will require sorting and some will require queries. You will be asked to print forms, tables, and reports.

The Human Resources Department wants a one-page list of all the employees, in alphabetical order.

The Purchasing Department wants a one-page list of all the videos currently at the stores, in alphabetical order.

Marketing would like to look at a one-page list of the customers that have rented videos, in alphabetical order.

- Print tables to satisfy each of these requests.

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Part F

Jo decides that his department needs several specialized printouts and asks you to prepare the following:

- We need to know who works at the Redmond store. Find those employees and print them so each one comes out on one page.
- We need a one-page list of all the videos at our Bellevue store.
- Print a one-page list of all the members who actually live in Bellevue.
- There is one member who lives in Seattle. Print out only that information on the page.

Part G

Jo is preparing to make a presentation to Jordan. As part of the presentation, he will need more printouts from our new VIDEO database about the customer base in Bellevue. But since this presentation is important, he wants the printouts to be really nice, so tell him not to worry, you'll create reports.

- Print a report of all the members who live in ZIP codes 98004, 98005, and 98006 with only the following fields in the report and in this order:

  FIRST NAME LAST NAME MEMBERSHIP NUMBER ADDRESS

  - Make sure the report fits on one page
  - Make the report in portrait layout
  - Title the report BELLEVUE MEMBERSHIPS
  - Center and bold the title – make the font size 19
  - Spread out the columns so the report covers most of the width of the page
  - and looks attractive
  - Sort the records so they are in order by membership number

Finally, Jo will recommend in his presentation to increase the number of classics offered at the Bellevue Store. He needs a report showing how one of the classics now offered has been rented several times recently.

- Print a report of all the members who last rented the video *Gone With The Wind*. Which includes only the following fields:

  MEMBERSHIP NUMBER NAME ZIP CODE

  - Use your own judgement to make sure this report is attractive and includes all required information.

IRCO
Artists Under Contract

Branch Artist Contacts	Artist or Group Name	Artist Business Address	Type of Music	Last Release
17	Mothers of Destruction	1 Seaview Lane/Seattle WA 98117	Rock	Rockin' Seattle
17	Ratz and Katz	2390 1st Avenue South/Seattle, WA 98168	Grunge	It Ain't Dead Yet
13	ICU	7816 Hunts Point Blvd./Hunts Point, WA 98006	Rap	ICU2
17	Princess	9219 19 Avenue SW/Seattle, WA 98134	Rock	Pink Haze
81	Gene Scruggs	599 18th Ave. South/Spokane WA 97025	Country	My Best Friend Ran Off With My Wife (And I Miss Him)
81	The Tattlin' Sisters	566 Tower Blvd/Spokane, WA 98027	Country	Momma's In Jail Again
81	Rapmaster Irving	8971 99th Street SE/Spokane, WA 98028	Rap	IrvB2cool
17	The CB's	26765 Hill Street/Sea-Tac, WA 98166	Country	My Truck's in Heaven Now
13	The Gee-Bees	611 9th Street/Auburn, WA 98003	Disco	Friday Night (After the Swing Shift)
13	Needles & Pinz	865 Kelsey Creek Drive/Bellevue, WA 98005	Grunge	One Tatoo Over The Line

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Module 7: Developing and Distributing an Annual Report

Module 7 – Developing and Distributing an Annual Report

Learner Outcomes:

Project Management

1. Explain the basic phases of project management and use appropriate project management planning tools and methods.
2. Coordinate the use of resources with other team members and groups.

Research and Analysis

3. Identify and use traditional and non-traditional sources of information.
4. Analyze, organize, and present research material.

Teamwork and Workplace Skills

5. Organize and work in a team setting.
6. Demonstrate leadership skills where applicable and show flexibility in accepting others' leadership.
7. Accept responsibility for one's own behavior and be aware of its impact on others.

Documentation and Business Communication

8. Understand the purpose and process of communication (oral and written) in organizations.
9. Create and present accurate and effective communication (oral and written) tailored to the specific purpose and needs of the audience.

Word Processing

10. Create compound documents with graphics and objects from multiple software applications.

Spreadsheet

11. Design, create and troubleshoot spreadsheets with graphs and charts.
12. Apply spreadsheet principles to real-life situations and solve business problems.

Database

13. Design relational databases which apply to actual situations and business problems.

Prerequisites:

Knowledge of basic computer functions and Windows, word processing, spreadsheet, and data base applications

INSTRUCTOR'S NOTES:

1) Although this module's title uses the term Annual Report and focuses on business terminology, you still may use many different types of organizations as the basis for a less formal report while completing the lessons. You also may find that grouping the students based on career interests helps to make the report development process more meaningful.

2) This module is project-oriented. Although specific lesson plans are provided for individual classes, you may choose to disseminate all of the information and details for the project during the first few classes and merely use the lesson plan timeframe as progress checks towards completion.

Total Class Time: Approximately 20 hours

Outside readings and other resources:

- *Accidental Empires: How the Boys of Silicon Valley Make Their Millions, Battle Foreign Competition, and Still Can't Get a Date* by Robert Cringely
- *Startup: A Silicon Valley Adventure* by Jerry Kaplan
- *The First $20 Million is Always the Hardest: A Silicon Valley Novel* by Po Bronson
- *Apple: The Inside Story of Intrigue, Egomania, and Business Blunders* by Jim Carlton

Module 7 – Developing and Distributing an Annual Report

Module overview:

Most organizations, from large companies to small clubs, are responsible for providing a status report at the end of the operating year to employees, group members, shareholders, and/or other important people. This type of report is often referred to as an *annual report*. Every year, it is the single most important business communication document produced by the organization.

Although the content of each annual report may vary, you will generally see all types of data (budgets, enrollment figures, expenses, membership lists), descriptions of different activities the organization was involved in throughout the year, and information about the individuals who manage and direct the organization's operation. Whether the report is produced for a club's members and its prospects, for a non-profit group's fund-raising efforts, or for a government agency, it requires the use of word processing, database, and spreadsheet skills along with careful planning and execution.

When finished with this module, you and a team of classmates will have produced for your portfolios a professional business document containing advanced spreadsheets and customized database reports.

Lesson Titles:

- 7-1 The Big Picture
- 7-2 A Look at Other Annual Reports
- 7-3 Making Plans for Your Project
- 7-4 Designing an Annual Report Layout
- 7-5 Spreadsheets Tell the Picture
- 7-6 'A Fistful of Data'
- 7-7 Start Spreading the News
- 7-8 Who's Who
- 7-9 Proofing and Printing
- 7-10 Looks Like We Made It

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Developing and Distributing an Annual Report

LESSON 7-1: The Big Picture *Approx. time: 1 class*

Lesson overview:
In this lesson students will be introduced to the concept of annual reporting and will begin to think about the contents of an annual report for an organization. They will also have an opportunity to familiarize themselves with business terminology and to hear from guest speakers with experience in the production of annual reports.

Students will demonstrate the ability to:
1. Identify the focus and general parameters of the project. (F/PM)
2. Evaluate requirements and identify missing or conflicting information. (F/ANL, ES-6)
3. Present the different forms of communication and their respective purpose in the organization. (F/D&BC)
4. Clearly define and articulate project scope and goals. (F/PM)
5. Analyze relationships between parts and whole. (F/ANL)
6. Explain terminology commonly used in business documents. (F/D&BC)
7. Listen effectively to guest speaker. (ES-5)

Prerequisites: Knowledge of basic computer functions and Windows, word processing, spreadsheet, and database applications

Content required:
1) Steps in project management
2) Business terminology

Resources:
Project Management by AMA
Samples of Annual reports from a variety of local companies, from organizations such as clubs or churches, or from government agencies.

Materials checklist:
- ✓ Transparency and handout for each student of Page 3 of the Module Overview (*JMOD7-Ovr*)
- ✓ Transparency and handout for each student of Business Terminology Worksheet (*JMOD7-1-1*)
- ✓ Handout for each student of Guest Speaker Evaluation Sheet (*JMOD7-1-2*)
- ✓ Sample of details for IRCO Simulation (*JMOD7-1-3*)

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Invite the Publications or Communications Director from a local company or non-profit organization to speak to the class. Ask him or her to address specifically the production details of their Annual Report. If sample copies of the Annual Report are available, request as many as possible for the students to review.

Part 2 – Introductory Discussion

1. Distribute the page from the Module Overview (*JMOD7-Ovr*) and provide time for the students to review the information.
2. Pass around samples of reports, if available, for the students to examine.
3. Have the students highlight the important details of this project and help them begin to develop a sense of the scope of the project.
4. Ask the students to consider what type of organization for which they could develop an annual report and where they would be able to find information for its content. Another suggested topic might be a yearbook for the Center.

IRCO Simulation-Optional

- Distribute the handout (*JMOD7-1-3*) containing details about the need for an IRCO Annual Report. Guide students in a discussion of the possible parameters for the project using information that they know about IRCO.

Part 3 – Group or Individual Activity

5. Distribute the Business Terminology Worksheet (*JMOD7-1-1*) and have students complete it either individually or in pairs.
6. Lead the students in a discussion of their definitions, concluding with an accurate consensus for each term.

Part 4 – Presentation by Guest Speaker

7. Schedule and conduct the visit by the guest speaker.
8. As the speaker describes the production process, emphasize how different departments within the organization contribute to the effort of producing a quality report. Record any new business terms that are used by the guest speaker and discuss their definitions after the presentation.

HOT Activities:

1. Have students, working in pairs, analyze their list of business term definitions and determine completeness and accuracy, based on the information received during the presentation.
2. After the guest speaker has left, distribute the Guest Speaker Evaluation Sheet (*JMOD7-1-2*) and gather the student reactions to the guest speaker's comments.

Assessment Methods:

- Observation by instructor of student participation in discussions with guest speaker and other classmates.
- Evaluation by students and instructor for completeness and accuracy of Business Terminology Worksheet.
- Evaluation by instructor of students' guest speaker response form.

Instructor evaluation and comments for improvement:

JMOD7-1-1

Business Terminology Worksheet
Lesson 7-1

Listed below are common terms found in annual reports of organizations. In your own words, develop and write a definition for each of these.

fiscal year:

budget:

actual:

projections:

market development:

consolidated balance sheets:

assets:

liabilities:

capital:

audited statement:

mission statement:

shareholders' equity:

retained earnings:

income:

expenses:

cash flow:

Guest Speaker Evaluation
Lesson 7-1

1) Please write below your comments and reactions to the guest speaker.

Module 7 – Developing and Distributing an Annual Report

IRCO Simulation:

The fiscal year for IRCO has ended and it's time to produce the Annual Report for the company. Jordan Ono, the president of IRCO, is very pleased with the performance of the company and is anxious to share all of the news of the past year with employees and friends of the company. Since IRCO is a privately-held corporation, there are no public shareholders requiring information about the company's accomplishments. However, it is the Annual Report that will become the basis for the presentation later this year to the Board of Directors' meeting.

In the past, Leslie, the VP of Sales and Marketing, along with Jordan's assistant, Darryl, has been responsible for the preparation of this report. This year both are very busy so the task will fall to a team of Production Assistants. Using the table of contents from last year's report shown below, you can see how extensive the report needs to be. Remember that since this table of contents reflects what happened the year before, you may find that you will need to add or modify it.

International Recording Company
Annual Report

Table of Contents

1. Letter from the President
2. Financial Highlights for the Year
    - 2.1. Budget
    - 2.2. Actual
    - 2.3. Projections
3. Achievements
    - 3.1. Production
    - 3.2. Marketing and Sales
    - 3.3. Artists and Labels
    - 3.4. Industry Awards
4. Board of Directors and Management Team

Jordan will prepare a message to be included at the beginning of the report. However, it will be up to you and your team to develop the information and formats for the rest of the contents of the report. Data from each of the corporate branch offices – Headquarters, Manhattan, Beverly Hills, Asia, and Europe – will need to be gathered and analyzed. For each of the different types of financial reports, spreadsheets on each location will be required. Database reports for each branch also will be necessary to describe adequately the various accomplishments for IRCO in the Achievement categories. Finally, your team will be responsible for writing the brief biographies on each of the corporate officers and board members that complete the report.

The deadline for the master copy of the Annual Report to be at the printer's is in less than two weeks. To make this project even more complicated, Jordan insists that each of his letters at the beginning of the report be personalized to the addressee.

When finished with this module, your team will have produced for your portfolios a professional business document containing graphics, spreadsheets with charts, and customized database reports.

Developing and Distributing an Annual Report

LESSON 7-2: A Look at Other Annual Reports *Approx. time: 1 class*

Lesson overview:

Every organization produces a unique annual report. However, all of these reports have common elements. In this lesson each student will study examples of at least three annual reports. From these reports students will develop a list of common features, as well as new elements that they would like incorporated in their version of an annual report.

Students will demonstrate the ability to:

1. Recognize the purpose of the research and available resources. (F/RES)
2. Use effectively oral, written, and on-line sources of information. (F/RES, ES-13)
3. Recognize and reconcile conflicts between different informational sources. (F/ANL)
4. Analyze and synthesize information and make recommendations. (F/ANL)
5. Involve others in cooperative team effort and consider their ideas. (F/TM, ES-10)
6. Follow directions to complete assignment (ES-4)

Prerequisites: Lesson 7-1

Content required:

1) Business document information
2) Group dynamics

Resources:

Online services for annual reports such as *The Public Register* at annualreportservice.com
Samples of Annual Reports for local organizations
Web sites of individual organizations; look under "Investor Services"

Materials checklist:

✓ Transparency and handout of Annual Report Summaries (*JMOD7-2-1*) for each student

Equipment checklist:

✓ Overhead projector

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Teaching strategy:

Part 1 – Introductory Discussion

1. Explain to the students that the purpose of this lesson is to review a variety of annual reports for gathering ideas from which they will develop an outline for their annual report. The actual outline will be prepared in Lesson 7-4.
2. Distribute the Annual Report Summaries handout (*JMOD7-2-1*) that will be used to record the students' research.

Part 2 – Individual/Group Assignments

1. Have the students from groups with no more than five members. Explain that each student in the group will identify three different organizations for which he or she will record the type of topics listed in the table of contents of the annual reports. (This means that each group would have up to 15 different content outlines from annual reports). Instruct the groups to choose a wide range of organizations among its members so that they get a variety of types of content outlines for annual reports.
2. Help students begin the selection process by providing examples of businesses, non-profit organizations, and even government agencies. Point out the web sites available and ask them to identify other similar resources that might be used. Once students have found valid organizations with an annual report, ask them to complete the handouts and print or make copies of the tables of contents of the annual reports to attach to the handout.

Assessment Methods:

- Evaluation and feedback for each student who completes the Annual Report Summaries worksheet, checking for completeness, validity of data, and appropriateness of choice of organizations.
- Observation by instructor of student groups working together.

Instructor evaluation and comments for improvement:

Annual Report Summaries
Lesson 7-2

List the names and details about the annual reports for three different organizations below:

Organization #1 - ______________________________

Organization #2 - ______________________________

Organization #3 - ______________________________

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Developing and Distributing an Annual Report

LESSON 7-3: Making Plans for Your Project *Approx. time: 1 class*

Lesson overview:

Since planning is critical to the eventual success of the production of an annual report, the focus of this lesson is on the preparation of a project plan and the development of an introductory letter.

Students will demonstrate the ability to:

1. Identify project resource requirements. (F/PM)
2. Map available resources to requirements. (F/PM)
3. Establish and identify milestones, benchmarks and frequency of monitoring. (F/PM)
4. Incorporate contingencies into project planning. (F/PM)
5. Respect different styles of communication and actively encourage contribution from all team members. (F/TW, ES-10)
6. Show active support of the team, its goals and its objectives. (F/TW, ES-8)
7. Follow directions to develop a professional business document. (T/WP, ES-4)

Prerequisites: Lessons 7-1 and 7-2

Content required:

1) Information about different annual reports from previous lessons
2) Steps in project management

Resources:

Project Management by AMA

Materials checklist:

- ✓ Sample of IRCO Simulation handout of the Message from the desk of Jordan Ono (*JMOD7-3-1*)

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Review the steps for successful project planning. This information is intended to help the students understand the scope of project management and their responsibilities.
2. Working in their groups, ask students to choose an organization for which they will develop the annual report.

Part 2 – Classroom Discussion

3. Guide the students in a discussion that identifies the important events or milestones necessary for the completion of the annual report for their organization. Have them refer back the Module Overview, if necessary. List these events on the board for reference.
4. Help the students determine the kinds of resources that will be necessary to complete the project and discuss planning issues that the students may encounter. List these on the board also.
5. Conclude with a discussion of the actual items or topics that will make up the annual report, one of which should be an introductory letter – the first item in most annual reports.

IRCO Simulation-Optional

- Distribute the handout of the Message from Jordan Ono (*JMOD7-3-1*), and allow some time for the students to review the details. This information is intended to help them develop the contents for the introductory Letter of Welcome in the next activities.

HOT Activities:

1. Ask each of the groups to develop a written timeline for the length of the project (to be determined by the instructor) that describes progress milestones, resource usage (both human and computer), and contingencies should there be any delays in their progress.
2. Have student groups develop a written document titled "Letter of Welcome". This document will be the introduction to their annual report. Field any questions that the students might have if they are unable to create or compose the necessary content. Keep in mind that you have the freedom to add, to modify, or to delete any of details for the purpose of the lesson. Encourage the students to be creative and to embellish upon the ideas suggested by their research.

Assessment Methods:

- Evaluation and feedback by instructor of written timelines prepared by groups of students.
- Evaluation and feedback by instructor of written document titled "Letter of Welcome".
- Observation of student participation in groups for the development of the timelines and introductory letters.

Instructor evaluation and comments for improvement:

MESSAGE *from the desk of*

Jordan Ono

Here are some of my thoughts for an introduction to the Annual Report. Use whatever you can! Last year, IRCO:

- Provided internships for a group of Production Assistants, who have helped in every phase of the company.
- Began the distribution of a Company Newsletter to more that 100 employees in our five locations.
- Signed on a number of new artists at each location:
  Main Office – 20, Manhattan – 12, Beverly Hills – 32, Hong Kong – 8, Paris – 16
- Attended these trade shows:
  Jan -NAMM National Association of Music Merchandisers
  Feb – Recording Artists' International Convention
  Mar - MRAA Music Recording Association of America
  April – Grammy Awards
  May – Country Music Association Awards Dinner
- Established an Internet Development Team for intelligence-gathering and advertising.
- Received award for Best CD Producer at MRAA at the Benaroya Symphony Hall in Seattle, and beat out Sony, Arista, Atlantic, and Capitol Records!
- Began the process of computerizing record keeping. Jo headed up the project with the use of databases for production, personnel, inventory management.
- Experimented with a video rental store business in the Seattle area.

Finally, don't forget to include a summary of IRCO's financial highlights, from spreadsheets!

Developing and Distributing an Annual Report

LESSON 7-4: Designing an Annual Report Layout *Approx. time: 1 class*

Lesson overview:
Based on the completed reviews of a variety of annual reports for other organizations, students will have an opportunity in this lesson to develop fully their own layout for their annual report and prepare its outline.

Students will demonstrate the ability to:

1. Create and modify an outline. (T/WP)
2. Use advanced formatting options. (T/WP)
3. Create style sheets and templates. (T/WP)
4. Communicate effectively with audiences with various degrees of expertise in a wide range of technical contexts. (F/D&BC, ES-7, ES-9)
5. Organize communication in a logical sequence. (F/D&BC)
6. Work collaboratively to achieve team goals and show flexibility. (F/TW, ES-10, ES-11)

Prerequisites: Lessons 7-1, 7-2 and 7-3

Content required:

1) Data on annual reports
2) Effective business communication techniques
3) Word processing features

Resources:

Online services for annual reports such as _The Public Register_ at
annualreportservice.com
Samples of annual reports for local organizations
Web sites of individual organizations; look under Investor Services
Word Processing manuals

Materials checklist:

✓ Transparency and handout of Annual Report Proposed Outline (*JMOD7-4-1*) for each group

Equipment checklist:

✓ Overhead projector
✓ Computer display projector

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Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the Annual Report Proposed Outline handout to each of the groups.
2. Explain to all of the students that the purpose of this lesson is to develop a written outline and format for their annual report.

Part 2 – Classroom Discussion

3. Using examples of other annual reports, help the students identify the *minimum* content areas required for their outlines.
4. Discuss with the students different ways in which this information could be reorganized and various ways to format or outline. Encourage students to share with the class the examples of annual reports found in their research during the previous lessons.
5. Record on the board features or characteristics of annual reports that students liked or found very effective in communicating the information about a organization.

Part 3 – Hands-on Computer Demonstration

6. Demonstrate the use of the outline feature in the word processing program and explain to the students how to use it in the next activity. Allow time for practice using the different types of outline formats. Ask the students to share with the class places where they may have seen these formats used.
7. Review the process for developing a template in the word processing application (which was used in Module 2). Have students volunteer to explain the steps in the process.

HOT Activities:

1. Ask the groups of students to develop a composite content outline for their annual report that incorporates as many as they can of the good features from the various organization annuals found in their research. Each group should record their outline on the handout.
2. Instruct student groups to design and print a written style sheet for the layout of their annual report. The document should address such topics as format, fonts, etc. to be used throughout. Explain to the students that this document will provide the guidelines for the rest of their production and maintain consistency in the look of the report.

Assessment Methods:

- Evaluation and feedback by instructor of proposed outline for the annual report developed by each student group.
- Evaluation and feedback by instructor of style sheets prepared by student groups.
- Observation of progress by and productivity within student groups.
- Self-assessment by individual students as to effectiveness of group process.

Instructor evaluation and comments for improvement:

Annual Report
Proposed Outline
Lesson 7-4

Group Members: ____________________

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LESSON 7-5: Spreadsheets Tell the Picture

Approx. time: 1 class

Lesson overview:

In this lesson each student will be responsible for preparing a spreadsheet for the organization, containing different types of financial information. Guidelines for the development of their spreadsheets should be provided and used in the evaluation process. A section in their annual report should include these spreadsheets.

Students will demonstrate the ability to:

1. Produce work that is thorough, accurate, complete, and meets the quality standards of the group. (F/WPS, ES-10)
2. Analyze and synthesize information. (F/ANL, ES-13)
3. Import data and embed objects in a spreadsheet. (T/SPS)
4. Use advanced spreadsheet formulas. (T/SPS)
5. Clarify when further information is required. (ES-6)
6. Troubleshoot spreadsheets. (T/SPS, ES-12)
7. Create and use macros. (T/SPS)
8. Link several worksheets in a spreadsheet. (T/SPS)
9. Share information and explain procedures to another team member. (ES-7)

Prerequisites: Lessons 7-1, 7-2, 7-3 and 7-4

Content required:

1) Advanced features of a spreadsheet
2) Data to be developed from research or provided by instructor.
3) Sample IRCO Simulation data provided in Instructor Reference Spreadsheets for each IRCO branch:
    a) Headquarters or Main Office (*JMOD7-5-7*)
    b) Manhattan (*JMOD7-5-8*)
    c) Beverly Hills (*JMOD7-5-9*)
    d) Asia (*JMOD7-5-10*)
    e) Europe (*JMOD7-5-11*)

Resources:

Spreadsheet manuals and online Help in spreadsheet application
Samples of spreadsheets in annual report examples

Materials checklist:

- ✓ Instructor prepared list of spreadsheet criteria that would incorporate use of advanced spreadsheet skills. Use the sample criteria for IRCO for ideas.
- ✓ Sample of IRCO Spreadsheet Criteria (*JMOD7-5-12*)

- ✓ Step-by-Step Handout for each student (*JMOD-5-13*)
- ✓ Sample of IRCO Combined Budgets (*JMOD7-5-1*)
- ✓ Sample of IRCO Simulation Handout of Memo from Manhattan Branch (*JMOD7-5-2*)
- ✓ Sample of IRCO Simulation Handout of Memo from Beverly Hills Branch (*JMOD7-5-3*)
- ✓ Sample of IRCO Simulation Handout of Memo from Asia Branch (*JMOD7-5-4*)
- ✓ Sample of IRCO Simulation Handout of Memo from Europe Branch (*JMOD7-5-5*)
- ✓ Sample of IRCO Simulation Handout of Memo from Headquarters or Main Office (*JMOD7-5-6*)

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Design a list of criteria that students will use as a guide for the development of their spreadsheets. Have students utilize as many as possible of the advanced spreadsheet functions to accomplish the criteria.

Part 2 – Introductory Discussion

2. Explain that the purpose of this lesson is to develop the financial section of the annual reports utilizing advanced spreadsheet techniques.
3. Distribute the instructor-prepared handout outlining the criteria for spreadsheet preparation for each student within the groups. Give the students time to review each of the requirements and ask questions for clarification.

Part 3 – Hands-On Computer Demonstration

4. Distribute the Step-by-Step handout (*JMOD7-5-13*) to all of the groups of students.
5. Assign each member the responsibility for demonstrating the steps of at least one of the spreadsheet functions below to the rest of the group:
   - Importing data
   - Embedding objects
   - Creating and using macros
   - Linking of several worksheets in a spreadsheet
   - Creating advanced formulas
6. Instruct each group member to repeat the steps to familiarize themselves with the function's steps after the demonstration. Monitor the group activity carefully to maintain optimum productivity.

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Part 4 – Group Activity

7. After all of the demonstrations and practice have been completed, ask the students to think of ways that each of these functions might be used in the development of their spreadsheets.
8. Have each group determine which member will be responsible for different spreadsheets based on the available data.

IRCO Simulation-Optional

- Using the projection of the IRCO Spreadsheet Criteria (*JMOD7-5-12*) and the Combined Budgets (*JMOD7-5-1*) handouts, review with the students each of the criteria and discuss any questions they might have.
- Distribute the Memos (*JMOD7-5-2, JMOD7-5-3, JMOD7-5-4, JMOD7-5-5, and JMOD7-5-6*) for use developing the data for the spreadsheets.
- Assign each member of the group to be responsible for developing up to three spreadsheets for IRCO's Annual Report.

HOT Activities:

1. Ask each student to design and develop the spreadsheet for his/her assigned area. Remind students to work within their groups to assure that the formats are consistent with their spreadsheets. Monitor their progress closely to determine if any additional or remedial instruction is required. Encourage students with stronger spreadsheet skills in the groups to offer assistance to the other members in their groups, if needed. (If using the IRCO Simulation, the spreadsheets provided for instructor reference help determine the accuracy of students' spreadsheets as well as if they are actually 'on target' with their spreadsheet development skills.)

Assessment Methods:

- Evaluation and feedback by the instructor on up to three spreadsheets prepared by students, using the criteria handout as a checklist.
- Observation of group interaction and progress by instructor.
- Evaluation by the instructor of student participation in the demonstration and explanation of advanced spreadsheet functions.

  Answers to advanced calculation section:

  1. To calculate the current balance for the first transaction (cell F7): =SUM(F6,D7,-E7) As you enter new transactions, copy this formula to the cell that contains the current balance for the new transaction.
  2. To display the full name in the format "first_name last_name": =D5&" "&E5
  3. =F5*(1+5%) If the percentage amount is stored in a cell (F2): =F5*(1+F2)

Instructor evaluation and comments for improvement:

IRCO Spreadsheet Criteria
Lesson 7-5

Listed below are the requirements to be included in the development of your spreadsheets for your IRCO branch.

1. All spreadsheets should contain a customized header with the title information.
2. All spreadsheets should be centered on the page and positioned according to size.
3. Each branch of IRCO is required to have 3 spreadsheets in the Annual Report:
   - **Budget** – this spreadsheet is what was expected to happen last year.
   - **Actual** – this spreadsheet is what, in fact, did happen last year.
   - **Projection** – this spreadsheet is the new budget that projects expenditures for the coming year.
4. Use the IRCO Combined Budgets Spreadsheet file (*JMOD7-5-1*) as the master workbook and link each branch's data through a series of sheets.
5. Use the information contained in the Memo from your specific branch to construct your Budget and Actual spreadsheets.
6. Develop different categories for columns or rows to provide as much financial analysis of the branch as possible. For example, Number of CDs Produced Per Month, Average Number of New Artists Signed Per Month, Differences between Budget and Actual, Improvements over Previous Year, etc.
7. Jordan has set a production goal of 4 million CDs for the new year. Use this figure as a basis for your branch's projections.
8. Incorporate at least one graph or chart for each branch in the Annual Report.
9. Within your group, develop and use a macro, in order to save work and time.
10. Upon completion of each spreadsheet, have a member of your group validate that there are no errors. If errors are found, figure out why, and correct before printing and distributing.

STEP-BY-STEP HANDOUT
Lesson 7-5

Advanced Spreadsheet Functions

Linking and embedding objects

Information or data can be imported from another spreadsheet or application and used in your spreadsheet. This is accomplished through the processes of linking or embedding. The information is referred to as *objects*.

1) Develop a definition for *embedding*: ______________________________
____
____

2) Develop a definition for *linking*: ______________________________
____
____

Exercise: Copy information from an existing file as a linked or embedded object.

1. Select the information you want to copy as a linked or embedded object.
2. Click **Copy** or **Cut**.
3. Switch to the file you want to place the information in, and then click where you want the information to appear.
4. On the **Edit** menu, click **Paste Special**.
5. To paste in the information as a linked object, click **Paste link**.
   To paste the information as an embedded object, click **Paste**. In the **As** box, click the entry with the word "object" in its name.

Linking of several worksheets in a spreadsheet

A spreadsheet application also allows you to share formulas for calculating data with other worksheets or even workbooks.

Exercise: Create a formula to calculate data on another worksheet.

1. In the worksheet that will contain the formula, select the cell in which you want to enter the external reference.
2. If you are creating a new formula, type = (an equal sign).
   If you are entering the external reference elsewhere in the formula, type the operator or function that you want to precede the external reference.
3. Click the worksheet than contains the cells you want to link to.
4. Select the cells you want to link to.
5. Complete the formula. When you finish entering the formula, press **Enter**.

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Creating and using macros

If you perform a task repeatedly in your spreadsheet, you can automate the task with a *macro.* A macro is a series of commands and functions that are stored and can be run whenever you need to perform the task, just as you record music with a tape recorder to playback later.

Exercise: Record a macro

1. On the Tools menu, point to Macro, and then click Record.
2. In the Macro name box, enter a name for the macro. (The first character must be a letter.)
3. To run the macro by pressing a keyboard shortcut key, enter a letter in the Shortcut key box.
4. In the Store macro in box, click the location where you want to store the macro.
5. To include a description of the macro, type the description in the Description box.
6. Click OK.
7. Carry out the actions you want to record.
8. On the Stop Recording toolbar, click Stop Recording.

Creating advanced formulas

Besides simple arithmetic calculations, spreadsheets are capable of many advanced types of formulas.

Exercise: Develop a correct formula for accomplishing each of the tasks below in a spreadsheet.

1. Calculate the running balance in a checkbook register. Assume that cell D7 contains the current transaction's deposit, cell E7 contains any withdrawal amount, and cell F6 contains the previous balance.

2. Join a first name stored in one cell with a last name stored in another cell. Assume that cell D5 contains the first name and cell E5 contains the last name.

3. Increase a numeric value stored in one cell by a percentage, such as 5 percent. Assume that cell F5 contains the original value.

JMOD7-5-1

IRCO Simulation
Combined Budgets
Lesson 7-5

Month	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
Sales Revenue	2,160,000	2,180,000	2,200,000	2,220,000	2,240,000	2,260,000	2,280,000	2,300,000	2,320,000	2,340,000	2,360,000	2,380,000	27,240,000
Royalties	97,200	98,100	99,000	99,900	100,800	101,700	102,600	103,500	104,400	105,300	106,200	107,100	1,225,800
Salaries	473,000	473,000	473,000	473,000	473,000	473,000	473,000	473,000	473,000	473,000	473,000	473,000	5,676,000
Office Expenses	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,200,000
Production Costs	567,000	572,250	577,500	582,750	588,000	593,250	598,500	603,750	609,000	614,250	619,500	624,750	7,150,500
Totals	922,800	936,650	950,500	964,350	978,200	992,050	1,005,900	1,019,750	1,033,600	1,047,450	1,061,300	1,075,150	11,987,700

International Recording
Company - Manhattan

Memo

To: Jordan Ono
From: Howie Doowen
CC: Annual Report Staff
Date: 01/22/00
Re: Financial Information for Previous Year

We're always up to our eyeballs in snow but the year before last we still did 15% of IRCO's $21,630,000 total – not bad for a small branch and considering our stafffing problems.

Looks like we shipped 519,121 units at the same sales price of $8.00 per CD this year.

4.5% of the sales revenue was paid to the artists for royalties as usual.

The production costs in Manhattan, also, were reduced to an average of $2.00 per CD.

Salary and office expenses for this branch totaled $1,080,000 and $288,000 for the previous year, according to Accounting.

Ciao.

International Recording
Company – Beverly Hills

Memo

To: Jordan Ono
From: Sheri Davidson
CC: Annual Report Staff
Date: 01/22/00
Re: Financial Information for Previous Year

As usual, the Beverly Hills branch of IRCO outperformed everybody with 45% of the $21,630,000 in sales revenue during the year before last.

And, of course, we shipped a whopping 1,216,687 units at the same sales price of $8.00 per CD.

Artists were paid the same 4.5% of the sales revenue for royalties.

Our production costs also were reduced to an average of $2.00 per CD like everyone else.

Salary and office expenses for this branch totaled $1,080,000 and $288,000 for the previous year, according to Accounting.

Surf's up -- so, call my pager if you need anything more……….

International Recording Company – Asia

Memo

To: Jordan Ono

From: Tim Lee

CC: Annual Report Staff

Date: 01/22/00

Re: Financial Information for Previous Year

We believe the history of the IRCO branch for Asia will indicate that only 5% of the $21,630,000 was made by us during the year before last.

For this past year, it has been reported that production totaled 154,114 units at the same sales price of $8.00 per CD.

Fees paid to artists for royalties were the same, at 4.5% of the sales revenue.

Production costs in Hong Kong were reduced to an average of $2.00 per CD, as was seen in other branches.

Salary and office expenses for this branch totaled $1,080,000 and $288,000 for the previous year, according to Accounting.

It was my sincere pleasure to gather this data for you and I look forward to your next visit .

Sayonara.

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International Recording Company – Europe

Memo

To: Jordan Ono
From: Jacque du Pre
CC: Annual Report Staff
Date: 01/22/00
Re: Financial Information for Previous Year

Bonjour.

To the best of my knowledge, IRCO's European branch, located in Paris, was responsible for 10% of the $21,630,000 that was made the year before last.

I am happy to report that production totaled 289,301 units at the same sales price of $8.00 per CD for this past year.

Royalty fees paid to artists were the same, at 4.5% of the sales revenue.

Production costs company-wide, as reported to me, were reduced to an average of $2.00 per CD.

Salary and office expenses for this branch totaled $1,080,000 and $288,000 for the previous year, according to Accounting.

I will be going to the Riviera for a few days of sun next week, but will check in with you in case you need any more information.

JMOD7-5-6

International Recording Company

Memo

To: Jordan Ono

From: Jo Santiago

CC: Annual Report Staff

Date: 01/22/00

Re: Financial Information for Previous Year

Hi.

As you will remember, the headquarters office was responsible for 25% of the $21,630,000 that IRCO made the year before last.

This past year our production increased to a total of 770,568 units at the same sales price of $8.00 per CD.

The royalty fee paid to artists also remained the same this past year, at 4.5% of the sales revenue.

However, production costs company-wide were reduced to an average of $2.00 per CD.

Salary and office expenses for this branch totaled $1,080,000 and $288,000 for the previous year, according to Accounting.

Hope this information helps the cause!

IRCO Simulation Budget and Actual for Headquarters
Teacher Reference Spreadsheet
Lesson 7-5

Month	1	2	3	4	5	6	7	8	9	10	11	12	Totals
Company													
Budget	2,160,000.00	2,180,000.00	2,200,000.00	2,220,000.00	2,240,000.00	2,260,000.00	2,280,000.00	2,300,000.00	2,320,000.00	2,340,000.00	2,360,000.00	2,380,000.00	27,240,000.00
Royalties	97,200.00	98,100.00	99,000.00	99,900.00	100,800.00	101,700.00	102,600.00	103,500.00	104,400.00	105,300.00	106,200.00	107,100.00	1,225,800.00
Salaries	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	5,676,000.00
Office Exp	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	1,200,000.00
Production	567,000.00	572,250.00	577,500.00	582,750.00	588,000.00	593,250.00	598,500.00	603,750.00	609,000.00	614,250.00	619,500.00	624,750.00	7,150,500.00
Totals	922,800.00	936,650.00	950,500.00	964,350.00	978,200.00	992,050.00	1,005,900.00	1,019,750.00	1,033,600.00	1,047,450.00	1,061,300.00	1,075,150.00	11,987,700.00
Headquarters													
Budget	540,000.00	545,000.00	550,000.00	555,000.00	560,000.00	565,000.00	570,000.00	575,000.00	580,000.00	585,000.00	590,000.00	595,000.00	6,810,000.00
Royalties	24,300.00	24,525.00	24,750.00	24,975.00	25,200.00	25,425.00	25,650.00	25,875.00	26,100.00	26,325.00	26,550.00	26,775.00	306,450.00
Salaries	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	1,419,000.00
Office Exp	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	300,000.00
Production	141,750.00	143,062.50	144,375.00	145,687.50	147,000.00	148,312.50	149,625.00	150,937.50	152,250.00	153,562.50	154,875.00	156,187.50	1,787,625.00
Totals	230,700.00	234,162.50	237,625.00	241,087.50	244,550.00	248,012.50	251,475.00	254,937.50	258,400.00	261,862.50	265,325.00	268,787.50	2,996,925.00
Headquarters													
Actual	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	513,712.00	6,164,544.00
Royalties	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	23,117.04	277,404.48
Salaries	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	1,080,000.00
Office Exp	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	288,000.00
Production	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	128,428.00	1,541,136.00
Totals	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	248,166.96	2,978,003.52
# of cd's	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	64,214.00	770,568.00

Not For Student Use

IRCO Simulation Budget and Actual for Manhattan
Teacher Reference Spreadsheet
Lesson 7-5

Month	1	2	3	4	5	6	7	8	9	10	11	12	Totals
Company													
Budget	2,160,000.00	2,180,000.00	2,200,000.00	2,220,000.00	2,240,000.00	2,260,000.00	2,280,000.00	2,300,000.00	2,320,000.00	2,340,000.00	2,360,000.00	2,380,000.00	27,240,000.00
Royalties	97,200.00	98,100.00	99,000.00	99,900.00	100,800.00	101,700.00	102,600.00	103,500.00	104,400.00	105,300.00	106,200.00	107,100.00	1,225,800.00
Salaries	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	5,676,000.00
Office Exp	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	1,200,000.00
Production	567,000.00	572,250.00	577,500.00	582,750.00	588,000.00	593,250.00	598,500.00	603,750.00	609,000.00	614,250.00	619,500.00	624,750.00	7,150,500.00
Totals	922,800.00	936,650.00	950,500.00	964,350.00	978,200.00	992,050.00	1,005,900.00	1,019,750.00	1,033,600.00	1,047,450.00	1,061,300.00	1,075,150.00	11,987,700.00
Manhattan													
Budget	324,000.00	327,000.00	330,000.00	333,000.00	336,000.00	339,000.00	342,000.00	345,000.00	348,000.00	351,000.00	354,000.00	357,000.00	4,086,000.00
Royalties	14,580.00	14,715.00	14,850.00	14,985.00	15,120.00	15,255.00	15,390.00	15,525.00	15,660.00	15,795.00	15,930.00	16,065.00	183,870.00
Salaries	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	1,135,200.00
Office Exp	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	240,000.00
Production	85,050.00	85,837.50	86,625.00	87,412.50	88,200.00	88,987.50	89,775.00	90,562.50	91,350.00	92,137.50	92,925.00	93,712.50	1,072,575.00
Totals	230,700.00	234,162.50	237,625.00	241,087.50	244,550.00	248,012.50	251,475.00	254,937.50	258,400.00	261,862.50	265,325.00	268,787.50	1,454,355.00
Manhattan													
Actual	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	346,080.67	4,152,968.00
Royalties	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	15,573.63	186,883.56
Salaries	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	1,080,000.00
Office Exp	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	288,000.00
Production	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	86,520.17	1,038,242.00
Totals	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	129,986.87	1,559,842.44
# of cd's	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	43,260.08	519,121.00

BEST COPY AVAILABLE

IRCO Simulation Budget and Actual for Beverly Hills
Teacher Reference Spreadsheet
Lesson 7-5

Month	1	2	3	4	5	6	7	8	9	10	11	12	Totals
Company													
Budget	2,160,000.00	2,180,000.00	2,200,000.00	2,220,000.00	2,240,000.00	2,260,000.00	2,280,000.00	2,300,000.00	2,320,000.00	2,340,000.00	2,360,000.00	2,380,000.00	27,240,000.00
Royalties	97,200.00	98,100.00	99,000.00	99,900.00	100,800.00	101,700.00	102,600.00	103,500.00	104,400.00	105,300.00	106,200.00	107,100.00	1,225,800.00
Salaries	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	5,676,000.00
Office Exp	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	1,200,000.00
Production	567,000.00	572,250.00	577,500.00	582,750.00	588,000.00	593,250.00	598,500.00	603,750.00	609,000.00	614,250.00	619,500.00	624,750.00	7,150,500.00
Totals	922,800.00	936,650.00	950,500.00	964,350.00	978,200.00	992,050.00	1,005,900.00	1,019,750.00	1,033,600.00	1,047,450.00	1,061,300.00	1,075,150.00	11,987,700.00
Beverly Hills													
Budget	972,000.00	981,000.00	990,000.00	999,000.00	1,008,000.00	1,017,000.00	1,026,000.00	1,035,000.00	1,044,000.00	1,053,000.00	1,062,000.00	1,071,000.00	12,258,000.00
Royalties	43,740.00	44,145.00	44,550.00	44,955.00	45,360.00	45,765.00	46,170.00	46,575.00	46,980.00	47,385.00	47,790.00	48,195.00	551,610.00
Salaries	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	1,135,200.00
Office Exp	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	240,000.00
Production	141,750.00	143,062.50	144,375.00	145,687.50	147,000.00	148,312.50	149,625.00	150,937.50	152,250.00	153,562.50	154,875.00	156,187.50	1,787,625.00
Totals	230,700.00	234,162.50	237,625.00	241,087.50	244,550.00	248,012.50	251,475.00	254,937.50	258,400.00	261,862.50	265,325.00	268,787.50	8,543,565.00
Beverly Hills													
Actual	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	1,151,796.67	13,821,560.00
Royalties	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	51,830.85	621,970.20
Salaries	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	1,080,000.00
Office Exp	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	288,000.00
Production	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	287,949.17	3,455,390.00
Totals	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	698,016.65	8,376,199.80
# of cd's	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	143,974.58	1,727,695.00

IRCO Simulation Budget and Actual for Asia
Teacher Reference Spreadsheet
Lesson 7-5

Month	1	2	3	4	5	6	7	8	9	10	11	12	Totals
Company													
Budget	2,160,000.00	2,180,000.00	2,200,000.00	2,220,000.00	2,240,000.00	2,260,000.00	2,280,000.00	2,300,000.00	2,320,000.00	2,340,000.00	2,360,000.00	2,380,000.00	27,240,000.00
Royalties	97,200.00	98,100.00	99,000.00	99,900.00	100,800.00	101,700.00	102,600.00	103,500.00	104,400.00	105,300.00	106,200.00	107,100.00	1,225,800.00
Salaries	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	5,676,000.00
Office Exp	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	1,200,000.00
Production	567,000.00	572,250.00	577,500.00	582,750.00	588,000.00	593,250.00	598,500.00	603,750.00	609,000.00	614,250.00	619,500.00	624,750.00	7,150,500.00
Totals	922,800.00	936,650.00	950,500.00	964,350.00	978,200.00	992,050.00	1,005,900.00	1,019,750.00	1,033,600.00	1,047,450.00	1,061,300.00	1,075,150.00	11,987,700.00
Asia													
Budget	108,000.00	109,000.00	110,000.00	111,000.00	112,000.00	113,000.00	114,000.00	115,000.00	116,000.00	117,000.00	118,000.00	119,000.00	1,362,000.00
Royalties	4,860.00	4,905.00	4,950.00	4,995.00	5,040.00	5,085.00	5,130.00	5,175.00	5,220.00	5,265.00	5,310.00	5,355.00	61,290.00
Salaries	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	1,135,200.00
Office Exp	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	240,000.00
Production	28,350.00	28,612.50	28,875.00	29,137.50	29,400.00	29,662.50	29,925.00	30,187.50	30,450.00	30,712.50	30,975.00	31,237.50	357,525.00
Totals	230,700.00	234,162.50	237,625.00	241,087.50	244,550.00	248,012.50	251,475.00	254,937.50	258,400.00	261,862.50	265,325.00	268,787.50	-432,015.00
Asia													
Actual	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	102,742.67	1,232,912.00
Royalties	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	4,623.42	55,481.04
Salaries	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	1,080,000.00
Office Exp	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	288,000.00
Production	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	25,685.67	308,228.00
Totals	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-41,566.42	-498,797.04
# of cd's	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	12,842.83	154,114.00

Not For Student Use

IRCO Simulation Budget and Actual for Europe
Teacher Reference Spreadsheet
Lesson 7-5

Month	1	2	3	4	5	6	7	8	9	10	11	12	Totals
Company													
Budget	2,160,000.00	2,180,000.00	2,200,000.00	2,220,000.00	2,240,000.00	2,260,000.00	2,280,000.00	2,300,000.00	2,320,000.00	2,340,000.00	2,360,000.00	2,380,000.00	27,240,000.00
Royalties	97,200.00	98,100.00	99,000.00	99,900.00	100,800.00	101,700.00	102,600.00	103,500.00	104,400.00	105,300.00	106,200.00	107,100.00	1,225,800.00
Salaries	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	473,000.00	5,676,000.00
Office Exp	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	1,200,000.00
Production	567,000.00	572,250.00	577,500.00	582,750.00	588,000.00	593,250.00	598,500.00	603,750.00	609,000.00	614,250.00	619,500.00	624,750.00	7,150,500.00
Totals	922,800.00	936,650.00	950,500.00	964,350.00	978,200.00	992,050.00	1,005,900.00	1,019,750.00	1,033,600.00	1,047,450.00	1,061,300.00	1,075,150.00	11,987,700.00
Europe													
Budget	216,000.00	218,000.00	220,000.00	222,000.00	224,000.00	226,000.00	228,000.00	230,000.00	232,000.00	234,000.00	236,000.00	238,000.00	2,724,000.00
Royalties	24,300.00	24,525.00	24,750.00	24,975.00	25,200.00	25,425.00	25,650.00	25,875.00	26,100.00	26,325.00	26,550.00	26,775.00	306,450.00
Salaries	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	94,600.00	1,135,200.00
Office Exp	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	240,000.00
Production	56,700.00	57,225.00	57,750.00	58,275.00	58,800.00	59,325.00	59,850.00	60,375.00	60,900.00	61,425.00	61,950.00	62,475.00	715,050.00
Totals	230,700.00	234,162.50	237,625.00	241,087.50	244,550.00	248,012.50	251,475.00	254,937.50	258,400.00	261,862.50	265,325.00	268,787.50	327,300.00
Europe													
Actual	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	192,867.33	2,314,408.00
Royalties	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	8,679.03	104,148.36
Salaries	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00	1,080,000.00
Office Exp	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	288,000.00
Production	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	48,216.83	578,602.00
Totals	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	21,971.47	263,657.64
# of cd's	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	24,108.42	289,301.00

Not For Student Use

Developing and Distributing an Annual Report

LESSON 7-6: 'A Fistful of Data' *Approx. time: 1 class*

Lesson overview:
One of the most interesting sections of an annual report are the achievements throughout the past year of the organization. Students will have a chance to discover a wide range of information about the organization and the industry it's in as they gather data for their database reports.

Students will demonstrate the ability to:

1. Use effectively a wide range of research strategies and sources of information. (F/RES, ES-13)
2. Design a database that solves a business problem or applies to a real-life situation. (T/DB, ES-12)
3. Explain the relationship between database components. (T/DB)
4. Sort data on multiple fields. (T/DB)
5. Add filters. (T/DB)
6. Create different types of queries with multiple criteria. (T/DB)
7. Design and create a form. (T/DB)
8. Group data and make a calculation in reports. (T/DB)
9. Establish and maintain productive work relationships with all members of team. (F/TW, ES-10)
10. Share information and explain procedures to other group members. (ES-7)

Prerequisites: Lessons 7-1, 7-2, 7-3, 7-4 and 7-5

Content required:

1) Information about the organizations and their respective industries
2) Review of relational database features

Resources:
Database manuals and online Help in database application
Web sites of other similar organizations

Materials checklist:

- ✓ Instructor prepared list of database criteria that would incorporate the use of advanced database functions. Use the sample criteria for IRCO for ideas.
- ✓ Sample of IRCO Simulation handout of Database Criteria (*JMOD7-6-1*)
- ✓ Step-by-Step handout (*JMOD7-6-2*) for each student

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Design a list of criteria that students will use as a guide for the development of their databases. Have students utilize as many as possible of the advanced database functions to accomplish the criteria.

Part 2 – Introductory Discussion

2. Explain to the students that they will be using a database application to analyze data about their organizations and to prepare a mailing list for the final distribution of the annual report (Lesson 7-7).
3. Ask the students to share with the class what kinds of data they think might be important to their organization. Record their responses on the board. Next, ask several students to identify examples of achievements for their organizations that they might have already uncovered in their research.
4. Explain the need to gather and analyze information about past performance and how important it is to be able to make correct decisions based on the information. Continue to ask the students questions that they might consider when looking for new data, or when identifying new trends that might be developing within the organization's industry.
5. Distribute the handouts of the instructor prepared database criteria to all of the students. Provide time for everyone to review the requirements and answer any questions the students might have.

Part 3 – Hands-on Computer Demonstration

6. Distribute the Step-by-Step handout (*JMOD7-6-2*) to all of the groups of students.
7. Assign each member the responsibility for demonstrating the steps of at least one of the database functions to the rest of the group.
8. Instruct each group member to repeat the steps to familiarize themselves with the function's steps after the demonstration. Monitor the group activity carefully and offer assistance when needed.

Part 4 – Group Discussion and Activity

9. After all of the demonstrations and practice have been completed, conduct a discussion about ways that these database functions might be incorporated in the reports that the students will prepare. As students share their ideas, record these on the board.
10. Have each group determine which member will be responsible for different database reports based on the available data.

IRCO Simulation-Optional

- Focus a class discussion on what kinds of music they like. Record their responses on the board. Next, ask several students to identify their favorite recording artists or song titles. As each answer is given, ask the students if they know the record label that the artist uses.

- Explain the need to gather and analyze information about the music marketplace and how important it is for IRCO to be able to make correct business decisions based on the information. Continue to ask the students questions that IRCO might consider when looking for new artists to sign up, or when identifying new trends that might be developing in the music industry.
- Distribute the handouts of the IRCO Database Criteria (*JMOD7-6-1*) to all of the groups and provide review time.
- Since the Criteria Sheet points out in Step 7 that IRCO produces all of the current top100 hits, you may need to help the students develop a premise (or pretense) for which the information will be gathered and analyzed. For example:

  Popularity of different types of music (which categories IRCO should emphasize),
  Number CD Hits by Individual Artists (that IRCO might like to sign up),
  Number of Records Produced by Under Other Labels (what other companies like IRCO are focusing on),
  Number of CDs with Multiple Song Hits (for Marketing purposes), or
  Demographics of Artist Appeal (what factors should IRCO consider in looking at the total marketplace versus a smaller segment or niche).

HOT Activities:

1. Instruct the student groups to begin the development of their database. Remind the students that there are no incorrect analyses for the information they gather. Instead, the more data they gather and can manipulate adeptly in a database, the more they may find out about the organization.
2. Monitor the progress of the groups and watch for problems. Again, encourage students who have stronger database skills to help other members of their group.

Assessment Methods:

- Feedback and evaluation of database processes by instructor as student groups gather and analyze data.
- Observation by instructor of group participation.
- Assessments by students of group accomplishments.
- Evaluation by the instructor of student participation in the demonstration and explanation of advanced database functions.

Instructor evaluation and comments for improvement:

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IRCO Simulation Database Criteria
Lesson 7-6

Listed below are the requirements to be included in the development of your database reports for the IRCO Annual Report.

1. As a group, determine the data elements and design a relational database that has multiple tables, using information from your research on artists, labels, song titles, and CDs. Use the web sites listed below to develop categories of information relating to IRCO's participation in the music industry for your Annual Report.
2. Design and develop a form for data entry for members of your group.
3. Each member of your group is responsible for developing at least one sub form for his/her assigned topic.
4. Each member of the group is responsible for the preparation of at least one database report that exhibits the use of :
   - Sorts
   - Filters
   - Queries with multiple criteria.
5. Each report produced must include a calculation.
6. Customize the design of all of the reports developed to meet the format requirements of your group's style sheet.
7. Include all of the group's database reports in the IRCO Annual Report, with an explanation for each of the significance to IRCO of the data gathered and analyzed.
8. Assume, for analysis purposes, that IRCO produces the CDs for all of the top 100 hits and your group is determining music trends.
9. Here are some of the web sites that will provide data from which your reports can be developed:

   Billboard.com
   AristaRec.com
   RepriseRec.com
   Music.Warnerbros.com
   Elektra.com
   Atlantic-Records.com
   Musicblvd.com
   Sony.com

STEP-BY-STEP HANDOUT
Lesson 7-6

Advanced Database Functions

Create a multiple-field index:

1. Open the table in Design view.
2. Click **Indexes** on the toolbar.
3. In the first blank row in the **Index Name** column, type a name for the index. You can name the index after one of the index fields, or use some other appropriate name.
4. In the **Field Name** column, click the arrow and select the first field for the index.
5. In the next row in the **Field Name** column, select the second field for the index. (Leave the **Index Name** column blank in the row.) Repeat this step until you have selected all of the fields you want to include in this index. You can use up to 10 fields.
6. The default sort order is **Ascending**. Select **Descending** in the **Sort Order** column of the Indexes window to sort the corresponding field's data in descending order.

Add a table or query to a query:

1. Open a query in Design view.
2. On the toolbar, click **Show Table**.
3. In the **Show Table** dialog box, click the tab that lists the objects whose data you want to work with. If the table you need is in another database or application, first link the table to the active database.
4. Click the name of the object you want to add to the query. To select additional object one at a time, hold down **Ctrl** while you click each object name. To select a block of objects, click the first name in the block, hold down **Shift**, and then click the last name in the block.
5. Click **Add**, then click **Close**.

Creating and applying a filter:

A filter is like a simple query, except that it applies only to an open table or form. It is best for temporarily changing the set of records you are viewing. You should create and save a query, however, when you know you want to frequently view a certain set of records in a certain order.

1. With a table or form open, choose **Edit Filter/Sort** from the **Records** menu.
2. Drag one or more fields to the **Field** row of the grid in the lower portion of the **Filter** window. Include only those fields for which you want to specify criteria or sort order.

3. Specify criteria, sort order, or both under the field or fields included in the filter.
4. Choose **Apply Filter/Sort** from the **Records** menu.

Group records in a report:

You can group on up to 10 fields or expressions in a report.

1. Open the report in Design view.
2. Click **Sorting and Grouping** on the toolbar to display the **Sorting and Grouping** box.
3. Set the sort order for the data in the report.
4. Click the field or expression whose group properties you want to set.
5. Set the group properties in the following list. You must set either **GroupHeader** or **GroupFooter** to **Yes** in order to create a group level and set the other grouping properties.
   GroupHeader – Adds or removes a group header for the field or expression.
   GroupFooter – Adds or removes a group footer for the field or expression.
   GroupOn – Specifies how you want the values grouped. The options you see depend on the data type of the field on which you're grouping. If you group on an expression, you se all the options for all data types.
   GroupInterval – Specifies any interval that is valid for the values in the field or expression you're grouping on.
   KeepTogether – Specifies whether it prints all or only part of a group on the same page.

Calculate a running sum in a report:

1. Open the report in Design view.
2. Add a text box to one or more of the following sections.
   - To calculate a running sum that increases for each record, add a bound text box or a calculated text box to the detail section.
   - To calculate a running sum that increases for each group of records, add a bound text box or a calculated text box to the group header or footer.
3. To display the property sheet, make sure the text box is selected, and then click **Properties** on the toolbar.
4. Set the **RunningSum** property according to the type of running total you want:
   Over Group – Resets to 0 at the beginning of each higher group level.
   Over All – Accumulates until the end of the report.

Developing and Distributing an Annual Report

LESSON 7-7: Start Spreading the News *Approx. time: 1 class*

Lesson overview:
As mentioned at the beginning of the module, each annual report is to have a personalized letter sent with it to the recipient. Students will develop another database with names and addresses that can be used to accomplish their mail merge tasks.

Students will demonstrate the ability to:
1. Design a database that solves a business problem. (T/DB, ES-12)
2. Create a mail merge. (T/WP, ES-15)
3. Create different types of business documents. (F/D&BC)
4. Work effectively with members of the team. (F/TW, ES-10)
5. Share information and explain procedures to others. (ES-7)
6. Analyze the information for relevance and accuracy. (F/ANL)
7. Improve continuously the quality of products and processes. (F/ANL)

Prerequisites: Lessons 7-1 through 7-6

Content required:
1) Mail merge features of word processor
2) Formats for (international) mail addresses

Resources:
Online Help for word processing application
Word processing manual

Materials checklist:
- ✓ Instructor prepared mailing list form or sample data to be used by students which would incorporate the use of data tables
- ✓ Sample of IRCO Simulation mailing list for Asia (*JMOD7-7-1*)
- ✓ Sample of IRCO Simulation mailing list for Europe (*JMOD7-7-2*)
- ✓ Sample of IRCO Simulation mailing list for Manhattan (*JMOD7-7-3*)
- ✓ Sample of IRCO Simulation mailing list for Beverly Hills (*JMOD7-7-4*)
- ✓ Sample of IRCO Simulation mailing list form for Headquarters/Main Office (*JMOD7-7-5*)

Teaching strategy:

Part 1 – Before Class Instructor Preparation
1. Develop a mailing list form or gather a list of names that students can use for the mail merge activity.

Part 2 – Classroom Discussion

2. Explain that the purpose of this lesson is to develop a database with names and addresses for use in a mail merge activity with a personalized letter announcing the arrival of the copy of the annual report.
3. Distribute the instructor prepared mailing list form or list of names to each of the student groups and have them review the contents. (Point out that the group will need to create its own names and addresses if the data has not been provided by the instructor.)

IRCO Simulation-Optional

- Distribute the IRCO mailing list information (*JMOD7-7-1* through *JMOD7-7-5*) to each of the student groups and have them review the contents. Point out that the group will need to create its own names and addresses only for the Headquarters/Main Office mailing list.
- Have students create a new database with tables for each of the IRCO locations. These tables will be used in the word processor's mail merge feature to accomplish the personalized letters from Jordan.

HOT Activities:

1. Instruct the student groups to design and develop a mailing list database and entry form. Upon completing the development of the database, ask the groups to make a copy of the file for each member. Then, have each member of the student groups choose a portion of the list to enter into his/her copy of the database. After all of the students have finished the data entry, ask them to print out a copy of their mailing list and have another member of the group proof the accuracy of the list against the original handout.
2. Ask the groups to review the procedures for completing a mail merge of the database names with the "Letter of Welcome" that was completed in Lesson 7-3. (The letter may need to be modified slightly to accommodate the mail merge requirements.) Once all of the members of the group are familiar with the procedures, have each of them produce five examples of personalized letters.

Assessment Methods:

- Evaluation and feedback by instructor of database design for each groups' mailing list reports.
- Self-assessment by the students of the accuracy and completeness of the mailing list reports.
- Evaluation and feedback by instructor of each student's five personalized letters.
- Observation of the progress of the student groups by the instructor.

Instructor evaluation and comments for improvement:

IRCO's List of Annual Report Recipients
ASIA
Lesson 7-7

William Meadows
498 Baden Road
Neutral Bay
NSW 2089
Australia

Norma Jean Fulton
800 Collins Street
Melbourne
VIC 3004
Australia

Toshi Kamakazi
Matsuoka 1193-22
Fuji-shi Shizuoka 416, Japan

Sam Matsumoto
1-95-1-502 Nakashowacho
Tokushima City 770, Japan

Teri Yaki
204 Arisugawa Homes
5-5-14 Minami Azabu,
Minato-Ku, Tokyo 106, Japan

Sue Shi
4-3-1 1085 Azabujuban,
Minato-Ku, Tokyo 106, Japan

Benny Hana
2-1-31-605 Mita,
Minato-Ku, Tokyo 108, Japan

Tim Pura
3-1-3 Minami-Otsuka,
Toshima-Ku, Tokyo 170, Japan

Hing Lai
Pacific View Blk3 38 Tai Tam Road,
38-B Tai Tam,
Hong Kong

Charles Hsu
Flat 6B, Block 8,
City Garden North Point,
Hong Kong

Sheralyn Min
4 Fung Fai Terrace 4C,
Happy Valley,
Hong Kong

George Wong
Flat 1708 Ting Hong House,
On Ting Estate, Tuen Mun,
N.T. 220 Tsuen Wan
Hong Kong

Kim Yu
No. 68 C, Broadway Street,
Mei Foo, Kowloon,
Hong Kong

Sou-Chan Chang
26/F Esterling Bldg.
30 Queen's Road Central,
Hong Kong

Ronald Bozeman
6/F A Wyndham Mansion,
32 Wyndham Street,
Hong Kong

Anita Wu
19 Tai P. O. Rd. 13/F
Kowloon 47591
Hong Kong

Cathy Ewing
Block 11, Jalan Batu, 07-134
Singapore

Chinju Tu
130 Tai Peng Village,
2/F Yung Shue Wan,
Lamma Island,
Hong Kong

Ling-Ling Tai
117-21 Argyle St. Flat 14A
Kowloon
Hong Kong

Harry Fong
15B Wing Cheung Ct.
37-47 Bonham Road
Mid-Levels
Hong Kong

Gin Lee
Tregunter Tower 3
14 Tregunter Path
Mid-Levels
Hong Kong

Ryan Clark
Box 63 JKT
Jakarta, Indonesia

Shiraz Fajardo
Soekamo Hatta 631,
Bandung 40285, Indonesia

Lucy Kim
Green Building 79-2,
SongPa-Ku, Karak Dong,
Seoul 138-161, Korea

Jeong Jung
Gookdaewon Apt. 207-103,
San 37-5, Deok-Eun-Dong, Koyang-
Si,
Kyungki-Do,
Seoul 412-170, Korea

IRCO's List of Annual Report Recipients
EUROPE
Lesson 7-7

Guy Rouchouze
39 Rue de 22 Septembre,
92400 Courbevoie, France

Fritz Carter
17/21 rue Gramme,
Batiment B,
Paris 75015, France

Isabelle Franck
20 Cours Albert 1st,
Paris 75008
France

Alain Gilbert
28 Avenue Raphael
Paris 75016, France

Madeleine Villenot
10 Rue de la Grande Piece,
St. Nom-la-Breteche 78860
France

Dominique Johnson
Les Hameaux du Soleil,
Les Lauriers #18,
Villeneuve-Loubet, 06270
France

Peter Bouchard
7 Quai Chateaubriand,
Rennes 35059
France

Jean Louis Renard
1072 rue de Rouargues,
St. D'Diement de Riviere, 34980
France

Marie Dutertre
9, allee des Bois du Stade
33700, Merignac
France

Claudette Perrot
83 avenue Henri Martin
Paris 77116
France

Walter Richardson
Azura Park
272 Ave. de Fabron
Nice 06200
France

Katarina Lafond
1 rue des Trois Maisons
Viroflay 78220
France

Emile Roche
1 Cite de la Mairie
Paris 75018 France

Frederic Painvin
245 bis "La Ville"
St. Joachim 44720
France

Michael Norris
29 Quai Arloing
Bissey Sous Cruchard 69009
Lyon France

Francois Hitz
8 Rue des Lions-St. Paul
75004 Paris, France

Colette Mebane
553 Chemin du Puy
Residence Helvetia
06600 Antibes, France

Jeanne Marie Dyer
15 rue du Grand Veneur
75003 Paris, France

Claude Tabarlet
14 Ave. d'Oppem
B-1150 Woluwe St. Pierre
Brussels, Belgium

Cindi Schultz
Rue Murillo 51
1040 Brussels, Belgium

IRCO's List of Annual Report Recipients
MANHATTAN
Lesson 7-7

Niles Allen
141 W. 26th St. #3C
New York, NY 10001

Susan Richards
348 Paterson Plank Rd.
Scarsdale, NY 10585

Pat Campbell
32 Washington Square
New York, NY 10011

William Lloyd
101 W. 12th St. #252
New York, NY 10011

Carl Evans
201 E. 69th St. Apt. 44
New York, NY 10021

Marsha Gibbs
111 E. 14th St.
New York, NY 10003

Esther Hellmuth
55 Liberty Street #5B
New York, NY 10005

Fred Jones
1165 Park Avenue #1733
New York, NY 10128

Wendy Miller
2621 Palisade Ave Apt. 4
Bronx, NY 10463

Leigh Ann Minor
4621 28th Avenue
Long Island City, NY 11103

John Murray
954 Rock Creek Ln.
Scarsdale, NY 10583

Cynthia Young
7701 Dante St.
Larchmont, NY 10538

Mitch Rucker
490 Second Avenue No. 34G
New York, NY 10016

Alyson Wilson
504 E. 63rd St. Apt. 590
New York, NY 10021

Clark Houston
523 Hudson St.
New York, NY 10014

Brad Day
26 East 81st St. No. 8A
New York, NY 10028

Lenora Parker
314 W. 100th 54
New York, NY 10025

Karen Romero
6317 110th St.
Forest Hills, NY 11375

Andy Turner
150 W. 47th St. Apt. 2B
New York, NY 10036

Carmen Rodriguez
315 W. 92nd St. Unit 6-S
New York, NY 10025

IRCO's List of Annual Report Recipients
BEVERLY HILLS
Lesson 7-7

Raul Alvarez
230 S. Hamilton Unit 28
Beverly Hills, CA 90211

Sam Freidman
P. O. Box 847
Beverly Hills, CA 09213

Terry Garber
246 S. Linden Drive
Beverly Hills, CA 90212

Jerilyn Gimarc
355 South Wetherly Drive
Beverly Hills, CA 90211

Helen Haskellhoff
9955 Robbins Drive
Beverly Hills, CA 90212

Peter Khushf
1012 7th St. #12
Santa Monica, CA 90403

Evelyn Lasky
171 N. Pier Avenue Apt. 30
Santa Monica, CA 90405

Becca Monroy
906 11th St.
Santa Monica, CA 90402

Tony Rossini
721 Berkeley Street
Santa Monica, CA 90403

Olga West
6233 St. Clair Avenue
Studio City, CA 91604

Kathy Myers
5564 Natick Avenue
Sherman Oaks, CA 91403

John Morgan
322012 Mulholland Highway
Malibu, CA 90265

Carl Taphouse
9898 Wilshire Blvd. #916
Beverly Hills, CA 90121

Roberta Powers
4668 Indian Mesa Dr.
Thousand Oaks, CA 91360

Jay Sparks
1277 Victoria Avenue
Venice, CA 90291

Ann Elizabeth Fowler
900 Euclid Street Apt. 403
Santa Monica, CA 90403

Clyde Cravens
117 Westmount Drive
West Hollywood , CA 90069

Stella Wong
1570 Wilcox Avenue #105
Hollywood, CA 90028

Russell Webb
3333 N. Beachwood Dr.
Hollywood, CA 90068

Gina Vidnovic
5682 Basil Lane
Los Angeles, CA 90077

IRCO's List of Annual Report Recipients
HEADQUARTERS
Lesson 7-7

Compile below a list of 20 local names and addresses to which the IRCO Annual Report would be mailed:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.

Developing and Distributing an Annual Report

LESSON 7-8: Who's Who *Approx. time: 1 class*

Lesson overview:
Every annual report contains backgrounds on the management team and board members. This lesson represents an opportunity for the students to be as creative as possible in developing written descriptions of backgrounds for the organization's management or officers.

Students will demonstrate the ability to:

1. Use clear, focused, specific and grammatically correct language and terminology. (F/D&BC)
2. Work effectively as a team member. (ES-10)
3. Import or create and modify embedded objects from other applications. (T/WP)
4. Create and modify lines and objects. (T/WP)
5. Create and revise footnotes and endnotes. (T/WP)
6. Be responsive to the audience and adjust communication style accordingly. (F/D&BC)
7. Ask for clarification when further information is required. (ES-6)

Prerequisites: Lessons 7-1 through 7-7

Content required:

1) Background information on organizations' management teams
2) Creative writing tips
3) Review of word processing features

Resources:
Word processing manual and online Help

Materials checklist:

- ✓ Sample IRCO Simulation Handout of Background Worksheet : Jordan Ono, President (*JMOD7-8-1*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Leslie Thompson, Vice President of Marketing (*JMOD7-8-2*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Darryl Hughes, Administrative Assistant (*JMOD7-8-3*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Jo Santiago, Production Manager (*JMOD7-8-4*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Gloria Chavanne Barnett, Board Member #1 (*JMOD7-8-5*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Michael

Gonzales, Board Member #2 (*JMOD7-8-6*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Lawryn Bonasera, Board Member #3 (*JMOD7-8-7*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Thomas Chang Hwang, Board Member #4 (*JMOD7-8-8*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Robert Presley Howard, Board Member #5 (*JMOD7-8-9*)
- ✓ Sample IRCO Simulation Handout of Background Worksheet : Eva Otero, Board Member #6 (*JMOD7-8-10*)

Equipment Checklist:
- ✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion
1. Describe the purpose of this lesson as a writing assignment which will result in the description of organization's major directors.
2. Remind students to equally divide (if possible) the writing tasks among all of the members of the groups.
3. Provide time for students to develop information about each of the subjects and for them to ask any questions about the content required. It is advisable to establish a maximum length for the written backgrounds (no more than 2 pages, no smaller than 12 pt type, use of footnotes and endnotes, etc.). Write these guidelines on the board or prepare a separate handout that meets the needs of your class.

Part 2 – Computer Demonstration and Discussion
1. Review the concepts of of linking and embedding objects in an application and demonstrate a few examples in the word processing application.
2. Also introduce the methods for creating and modifying lines or objects in the text if students have not already utilized these features. Ask students to identify steps for each process where possible.
3. Demonstrate the use of footnotes and endnotes and discuss with the students where these features might be used in their reports.
4. Conclude the demonstration by having students practice ways of incorporating these functions in a temporary document.

IRCO Simulation-Optional
- Describe the purpose of this lesson by distributing all of the handouts (*JMOD7-8-1* through *JMOD7-8-10*) to each student group and by explaining the writing assignment as described below.
- Throughout the modules, remind the students that they have been provided with a foundation of details for developing the personality profiles for Jordan, Leslie, Jo, and Darryl. For the additional six board members, the sky is the limit as long as it is of a professional nature!

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HOT Activities:

1. Instruct the students to develop a written background for each of the members of the management team or board, which is to be included in their annual report. As students create their content, encourage them to include the professional considerations for each of the people associated with the organization, along with interesting details about their personal lives or other interests. Have the completed versions proofed by members of the group before printing out the final copies.

Assessment Methods:

- Evaluation by students of originality and use of grammatically correct language for each written background for their annual reports.
- Participation of students in demonstration and practice of advanced word processing features introduced by instructor.
- Observation by instructor of groups working together to create superior products.

Instructor evaluation and comments for improvement:

IRCO Simulation Background Worksheet: Jordan Ono, President

Putting You in the Picture: Jordan is a hands-on type of executive and participates daily in the management of the company. His background as a rock and roll musician in the late 60's, and as a 90's entrepreneur, gives him a special talent when guiding IRCO to new ventures.

IRCO Simulation Background Worksheet: Leslie Thompson, Vice President of Marketing

Putting You in the Picture: Leslie left a promising acting career in Dallas, TX to pursue her dream in music. Her innovative approaches to new markets have been very successful. Our company regularly participates in many music industry trade shows and is constantly looking at ways to attract new artists to our label.

IRCO Simulation Background Worksheet: Darryl Hughes, Administrative Assistant

Putting You in the Picture: Darryl answers directly to the President but is known to all employees as the "real power" behind the throne! If you ever need anything, don't hesitate to ask her. As the Administrative Assistant for the company, she knows everything and is always willing to help.

IRCO Simulation Background Worksheet: Jo Santiago, Production Manager

Putting You in the Picture: Jo played in his high school band. In college he studied computers. Now, he is able at IRCO to combine his two passions in producing some of the best CD albums released. His genius in making beautiful music sound even better is surpassed by his ability to keep his staff motivated and capable of meeting some of the most difficult deadlines.

IRCO Simulation Background Worksheet: Gloria Chavanne Barnett, Board Member #1

IRCO Simulation Background Worksheet:
Michael Gonzales,
Board Member #2

IRCO Simulation Background Worksheet: Lawryn Bonasera, Board Member #3

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IRCO Simulation Background Worksheet: Thomas Chang Hwang, Board Member #4

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IRCO Simulation Background Worksheet: Robert Presley Howard, Board Member #5

IRCO Simulation Background Worksheet:
Eva Otero,
Board Member #6

Developing and Distributing an Annual Report

LESSON 7-9: Proofing and Printing *Approx. time: 1 class*

Lesson overview:
As the deadline for completion of the annual report draws near, students will spend time during this lesson making the final revisions to their reports before printing. Each team member's work will be proofed by another team member. Teams will then be responsible for considering and making any necessary changes to ensure the consistency and accuracy throughout, prior to printing the entire report.

Students will demonstrate the ability to:

1. Produce multiple drafts that demonstrate knowledge of proofreading. (F/D&BC)
2. Work with a team to peer edit. (F/D&BC, ES-10)
3. Listen effectively and evaluate objectives, alternatives, and solutions carefully before making decisions. (F/PM, ES-5)
4. Stay on tasks until project is completed. (ES-15)
5. Recognize and actively build on team members' various strengths and expertise. (F/TW, ES-11)
6. Improve continuously the quality of products and processes. (F/WPS)

Prerequisites: Lessons 7-1 through 7-8

Content required:
1) All materials developed for annual reports

Resources:
Word Processing manuals or Online Help

Materials checklist:
✓ All completed assignments from previous lessons

Equipment checklist:
✓ Access to a copier if enough printers are not available

Teaching strategy:

1. Explain that in this lesson proofing and final revisions to the annual reports should be accomplished by the student groups.
2. Ask students to discuss any changes in their project plans or requirements for additional time, if available. Have them relate ways that they might have

improved upon the process and evaluate their overall success as a group. As students reflect on these issues, list on the board suggestions as to how to reinforce adaptability and flexibility of the group members during the course of the project.

3. Discuss the importance of obtaining each member's contributions to the group.

HOT Activities:

1. Instruct students to complete the proofing of and finishing touches to their final copies of the annual report. After every group member has signed off on the final document, have each group make 5 copies (or enough for the largest group in the class) of their report and include one of the personalized letters prepared by each group member (Lesson 7-7) in each copy.

Assessment Methods:

- Observation by instructor of students' participation in class discussion and group activity.
- Evaluation by instructor of proofed copies to determine quality of editing/proofing process by student groups.

Instructor evaluation and comments for improvement:

33.)

LESSON 7-10: Looks Like We Made It *Approx. time: 1 class*

Lesson overview:
The five copies of the annual report prepared by each student group are ready for distribution. As the final lesson in this module, students will review each of the reports produced by other groups and record their evaluations or/and comments. At the end of the review process, the group report with the highest score will become the best of the class Annual Report.

Students will demonstrate the ability to:
1. Complete tasks in accordance with standard and timeline. (F/PM, ES-15)
2. Produce work that meets the standards of the organization and expectations of the specific assignments. (F/WPS, ES-9)
3. Evaluate the use of various communication techniques and formats. (F/D&BC)
4. Listen effectively and base decisions on sound analysis methods. (F/ANL, ES-5)
5. Make recommendations for improvements to reports. (F/ANL)
6. Respect different styles of communication. (F/TW, ES-11)

Prerequisites: Lessons 7-1 through 7-9

Materials checklist:
- ✓ Transparency and enough copies of the handout Annual Report Evaluation Sheet (*JMOD7-10-1*) for every student to review each of the reports
- ✓ 5 sheets each of different colors of paper for each different report

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:

Part 1 – Before Class Instructor Preparation
1. Choose a color for each of the reports produced by the student groups. Attach a sheet of the colored paper to the front of each of the five copies. These colored sheets will be used to identify the authoring group, rather than their names, so as to encourage a more unbiased evaluation (for example, in the Group Report section of the Evaluation Sheet, students would list Blue, Green, Yellow, Pink, etc.).
2. Prepare a schedule for the review of the reports followed by a discussion time.
3. Develop a rating system and evaluation criteria checklist to guide the

students. Only major categories of criteria were provided in case you modified the lesson plans in this module along the way. IF no modifications were made, each of the categories could be worth 20 points. Specific details for each of the categories could even be developed by the students prior to beginning of the process and listed on the board.

Part 2 – Introductory Discussion

4. Distribute enough copies of the Annual Report Evaluation Sheet handout (*JMOD7-10-1)* to each student for each of the reports that they will be reviewing.
5. Explain that the purpose of the lesson is to review and evaluate carefully each of the annual reports. Also, tell the students that at the end of the evaluation process, the report with the highest scores will be chosen as the Best of the Class Annual Report and will become the basis for Module 12's presentation.

HOT Activities:

1. Instruct the students to analyze each of the reports according to the criteria provided, and complete an evaluation sheet for each. Provide enough time during the class for the students to review all of the reports and complete their comments.
2. Conduct a roundtable discussion of the evaluations and the annual reports' content, in general. Ask students to reflect upon an organization's reasons for producing a report like this. Have students comment on how their report compares with other annual reports that were studied earlier in the project. Ask students to recommend ways that they would improve their reports. Conclude by asking students to identify outstanding features or contributions by group members.

Assessment Methods:

- Students' assessment of each of the reports produced by the groups, and constructive feedback provided.
- Evaluation and written feedback by instructor of individual students' Evaluation Sheets.
- Observation by instructor of participation in roundtable discussion by all students.
- Evaluation and feedback by instructor of group achievements for project. Conference conducted with each group to explain results.

Instructor evaluation and comments for improvement:

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Annual Report
Evaluation Sheet
Lesson 7-10

Evaluator's Name: ______________________________

Group Report: ____________ Rating: ________

Please list your comments below based on evaluation criteria for content, format, completeness, creativity, and accuracy of information.

Module 8:
Preparing an Effective Presentation

Module 8 – Preparing an Effective Presentation

Learner Outcomes:

Organization and Delivery of Presentations

1. Select presentation technology methods and material appropriate to the audience and the purpose of the presentation.
2. Organize the presentation so that the material is complete, logically sequenced and meets presentation timelines and required content specifications.
3. Deliver the presentation material.
4. Assess the effectiveness of the presentation, and make recommendations for process and content improvements.

Presentation Software

5. Use the components of presentation software creatively and effectively.
6. Be proficient in using presentation software functions.

Teamwork and Project Management

7. Organize and work in a team setting.
8. Allocate time and resources according to task complexity and priority.

Prerequisites: Knowledge of basic computer functions, Windows, and word processing

Total Class Time: Approximately 10 hours

Outside readings and other resources:

Computer Concepts, by June Parsons and Dan Oja
Multimedia, Making It Work, by Tay Vaughan
An Interactive Guide to Multimedia, by John Villamil-Casanova and Louis Molina
Multimedia and Hypertext, The Internet and Beyond, by Jakob Nielsen
The Way Multimedia Works, by Simon Collin
How to Give a Terrific Presentation – American Management Association

Module 8 – Preparing an Effective Presentation

Module overview:

The ability to create and deliver an effective presentation is very valuable. Presentation software allows an individual to create electronic slides which communicate ideas, messages, and other information visually to a group of people. These slides can then be displayed on the computer's monitor, projected on a large screen or television, printed and handed out, or made into overhead transparencies.

Before you begin to use the presentation software, however, there are many things to consider and develop. It is planning that lays the foundation for a successful presentation and reduces problems that might come up along the way. Determining the goal of your presentation, getting a clear idea of who will see your presentation, knowing what you want to say to them, figuring out how much time it will take, having a graphic theme – all of this must be decided before you even start using the software.

Most presentation software programs provide you with many attractive predefined formats with complementary colors for backgrounds, text and other special effects. They also provide a variety of layouts for each individual slide so that one can create a title slide, a slide with clip-art, a two-column slide, and many others.

During this module, you will have an opportunity to develop a presentation with other team members and try out some of these many features. For your portfolio, you will produce:

1. A product comparison chart for presentation software.
2. A detailed design document with a content outline, navigation map, and storyboard.
3. A production timeline.
4. An effective PowerPoint presentation.

Lesson Titles:

- 8-1 About the Tools
- 8-2 Planning is the Key to Success
- 8-3 Producing the Presentation
- 8-4 Practice Makes Perfect
- 8-5 Slide Show Presentations and Evaluations

Preparing an Effective Presentation

LESSON 8-1: About the Tools *Approx. time: 1 class*

Lesson overview:

Students will be introduced to the purpose and elements of a good presentation and view sample presentations. Working in teams, students must decide which method of delivery they will use for their presentation after a variety of options are discussed, leading up to the use of a multimedia presentation software tool.

Students will demonstrate the ability to:

1. Identify and explain the purpose and elements of a good presentation. (F/O&D)
2. Explain the features and functions of different presentation software packages. (T/PRE, ES-13)
3. List technology delivery systems and methods available to aid presentations. (F/O&D, ES-8)
4. Describe the strengths and weaknesses of different presentation technologies. (F/O&D)
5. Explain different types of delivery methods appropriate to the size and nature of the audience and purpose of the presentation. (F/O&D)
6. Use effective communication skills when interacting in a team environment. (F/TW, ES-5, ES-10)

Prerequisites:

Knowledge of basic computer functions, Windows, and word processing

Content Required:

1) Purpose of presentations
2) Elements of good presentations
3) Organizational considerations
4) Available presentation tools
5) Principles of effectiveness

Resources:

Web sites of most major organizations or companies will have slide shows or examples of how they tell 'their' story. Review and select a variety to show during class or have students search on-line to identify examples.

Use Job Corps videos for examples of multimedia presestations.

Contact a large local company's Public Relations department and request a video or, even better, a representative who can give a multimedia presentation about the company to the class.

Texts on multimedia with CD samplers of presentation software

Web sites of multimedia presentation software manufacturers. Many times the

NewMedia Magazine or on-line software retailers (Egghead) Web sites will also spotlight the latest and greatest multimedia tools with demos.

Materials checklist:

- ✓ Examples of self-running demos or slide shows for organizations/businesses
- ✓ Transparency and handouts for students of Module 8 Overview (*JMOD8-Ovr*)
- ✓ Transparency and handouts for students of IT Notes (*JMOD8-1-1*) and (*JMOD8-1-2*)
- ✓ Step-by-Step handouts for students of Group Discussion Topics (*JMOD8-1-3*)
- ✓ Physical examples of each type of presentation tool if available or samplers/ demos of different presentation software packages
- ✓ Instructor prepared theme and parameters for presentations containing at least 20 slides
- ✓ Sample of IRCO Simulation handout of Jordan's Memo (*JMOD8-1-4)*

Equipment checklist:

- ✓ Overhead projector
- ✓ Computer display projector

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Develop a handout for the students which defines the theme and parameters for the presentations that they will develop. A maximum of 20 slides plus specific features such as graphics, use of slide masters or templates, background, application of transitions, etc. should be included in the requirements. Some suggested topics might be:
    - About the IT program or new Employability Skills.
    - For new student orientation.
    - For JC outreach and admissions contractors.
    - For local employers or IT employers.
    - For the Center's web site.

Part 2 – Introductory Discussion

2. Begin the discussion by distributing the Module Overview (*JMOD8-Ovr*) and allow time for the students to read the content.
3. Explain the purpose of this lesson and then hand out the IT Notes (*JMOD8-1-1*) and (*JMOD8-1-2*).

Part 3 – Classroom Discussion

4. After students have had a chance to look over the material, ask them to define 'presentation' and develop a definition that is acceptable to the class (such as a method of dispensing information). If their definition does not incorporate the available methods (in-person, electronic, paper-based), ask them to think of methods like these themselves.
5. Enhance the definition by adding purpose. This could result in answers like, educate, entertain, or both.

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6. Finally, conclude this part of the discussion on the points covered by the material in the first page of IT Notes (*JMOD8-1-1*). Emphasize preparedness, especially through careful planning. Ask the students if they agree or disagree with this concept and why. Find out if they have additional suggestions and record these on the board. Under Effective Communication, the focus is on a live presentation. Explore how the students could translate these same concepts to an electronic setting.

Part 4 – Demonstration or Guest Presenter

7. Present examples of slide shows from the Web or introduce a guest speaker if there is one. While the students are watching or listening, ask them to evaluate the presentation/s and keep a running list of good or bad methods used in the presentation. Have students share their findings at the end.

Part 5 – Classroom Discussion

8. Using the second page of IT Notes (*JMOD8-1-2*), continue the discussion by asking students to compare the different characteristics of each type of presentation. Use the physical examples to prod their memories if necessary! Ask a student to explain what the first category (a) is referring to (what format the information is in). Then ask if anyone can define the word “Multimedia”. Help the students develop a definition that includes all of the elements listed for the computer-based category. Review, if necessary, the definitions of each individual element. Also explain that the word “authoring” is used to describe the process of assembling the multimedia elements in a program, as opposed to “programming”.
9. Explain that there is another element of multimedia called “interactivity”. Again, canvas the students to determine if anyone can explain the concept. Guide them to develop an explanation that interactivity is when the program's method allows the user to interact and control the elements, especially the order of the content.
10. Speaking of order, finish the discussion by asking the students to describe the difference between a linear and a non-linear presentation and to give an example, or even draw a diagram (for example, a video tape or slide show with all of its frames or slides in a “long line” with no breaks or changes in direction vs. a program that has a menu system which allows the user to “jump around” or branch). Explain that this is referred to as navigation. Demonstrate on the board using arrows going straight down for linear, as compared to non-linear, which would be like a hierarchy or branching scenario as one finds in a menu.

Part 6 – Computer Demonstration

11. Before demonstrating the examples of presentation software, explain to the students that they will be responsible for analyzing each of the examples based on the categories discussed in the second IT Notes handout (*JMOD8-1-2*). Ask the students to suggest other categories that would be important in trying to decide which software to choose. (Cost, ease of use, system

specifications, etc.) Have students make a chart to record their comparison data and evaluation comments.

IRCO Simulation-Optional

- Distribute the Memo from Jordan (*JMOD8-1-4*) and explain that, as part or a Multimedia Development team, students will be responsible for preparing a slide presentation that will be shown at the upcoming regional Trade Show. Have students review the memo and answer any questions about the assignment.

HOT Activities:

1. Divide the class into teams of four or less and distribute the theme and parameters for the presentation along with the Step-by-Step for Group Discussion (*JMOD8-1-3*). (Instructor's note: You may want to assign the students to groups to maintain an equality of talent if there are some students experienced in presentation software who could act as mentors.) Go over the additional criteria for the presentation which will help their groups complete the discussion questions. Allow time for the groups to finish all 6 questions but monitor their progress carefully to keep everyone on track. Remind each member of the group to fill in his/her handout.
2. Encourage students to research additional Web sites not shown in class and identify a superior example of a presentation for them to demonstrate during the next class. If there are more presentations than time allows for showing, have the students compile a list of the sites and pass out to the class or display in the classroom.
3. After viewing the software samples/demos in class, have students conduct additional research by contacting the software manufacturers' Web sites for product features of the presentation programs and add these to their comparison study.

Assessment methods:

- Observation and assessment by instructor of student group interaction.
- Assessment and written feedback by instructor of student evaluations of presentations.
- Participation in research for additional Web sites evaluated by instructor.
- Participation during class discussions, evaluated by instructor.
- Observation by instructor of student analysis of presentation software examples.
- Evaluation and written feedback provided by instructor of comparison charts developed by students.
- Evaluation of quality and completeness of student research on presentation software program features.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 8-1

What Makes a Good Presentation?

"**Being great depends upon preparation.**"

A great presentation has these **elements**:

1. An opening that grabs the audience
2. Organization in a logical, easy-to-understand manner, including many examples, stories, analogies, anecdotes and humor.
3. Transitions, phrases or special effect techniques that move the presentation along.
4. Short sentences.
5. Easy-to-understand words.
6. An outstanding closing.

There are **key questions** to answer before a presentation is organized.

1. Who will be your audience?
2. What should the audience know, think, or do after the presentation?
3. What is the goal or objective of your presentation?
4. How much time do you have to make the presentation?
5. How will your presentation be evaluated, and who will evaluate it?

Three-Point Technique: The presentation should be organized into three points or the information in the presentation should be grouped into three areas. Audiences can remember three points successfully but will tend to forget most points if there are too many of them.

Effective Communication

- **Appearance:** Match the dress of the audience or one step above it. Presenter should not be over-dressed or under-dressed for the audience.
- **Facial Expression:** Maintain an open facial expression, display passion about your presentation, engage and talk to the audience, show confidence, and maintain continuous eye contact with the audience.
- **Body Language:** Hands down at your sides, unless gesturing. Gesturing is an effective communication tool to add dynamics and visual appeal. Maintain excellent posture, erect but relaxed, throughout the presentation. Place one foot half a foot in front of the other to maintain balance.
- **Voice:** Speak in a clear, confident, dynamic voice. Speak slowly and with enough volume for your audience to hear you clearly. Speak to the audience.
- **Information:** Know your presentation, have it well organized, and practice, practice, practice! Do research on your topic so you will be ready for your audience's questions.

IT NOTES
Lesson 8-1

Examples of Four Types of Presentation Tools

1) **Paper-based:**
    a) Text and/or graphics
    b) Non-interactive
    c) Linear
2) **Transparencies or slides:**
    a) Text and/or graphics
    b) Non-interactive
    c) Linear
3) **Video tape or TV:**
    a) Text, graphics, sound, and/or animation
    b) Non-interactive or self-running
    c) Linear
4) **Computer-based:**
    a) Text, graphic, sound, animation, and/or video
    b) Interactive, non-interactive, or self-running
    c) Linear or non-linear
    d) Program examples

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STEP-BY-STEP HANDOUT
Lesson 8-1

Group Discussion Questions

Group Name: ______________________________

Student's Name: ___________________________

Discuss each of the following questions with your team members and record the answers on this sheet.

1. What is the purpose of the presentation?

2. Who is the target audience?

3. What are you trying to accomplish?

4. What is the expected result?

5. What is the scope of the content?

6. What are the essential elements or design criteria?

JMOD8-1-4

International Recording Company

Memo

To: Multimedia Development Team

From: Jordan Ono

Date: March 1, 2000

Re: Requirements for Trade Show Presentation

Thank you for your willingness to accept this enormous challenge on behalf of IRCO. I know that there is not a lot of time until the Trade Show. Your team must research and organize the information, learn a new presentation program, and be inspired to create an exciting presentation that will attract new customers. I have absolute confidence in your abilities to accomplish the task, based on your past track records and cooperation with fellow team members.

The purpose of the presentation is to give information about 1) IRCO's history; 2) the power people running the company; 3) IRCO's presence in the marketplace and its international stature; 4) current recording artists that the company represents; and 5) future marketing plans. The slide show will play continuously at IRCO's booth in the Trade Show to attract the attention of visitors, who will then stop to watch the presentation and talk to a company representative in the booth.

It is expected that you will divide the work equally among yourselves and that each member will work on separate parts of the presentation. These will then be combined at the end to produce the final version. Here are some directions to guide your development:

- The presentation should not exceed 20 slides and limit your text to no more than 5 bullets per slide.
- Remember that people are walking by, so the screen must be easily seen and understood by the audience. Offer a good color balance.
- The entire completed presentation must fit on a single floppy disk.

Hopefully, this information will be valuable in your planning process and you will succeed in producing the most fantastic presentation for IRCO!

Preparing an Effective Presentation

LESSON 8-2: Planning is the Key to Success *Approx. time: 1 class*

Lesson overview:

Once an idea as been conceived for a presentation, the natural tendency is to sit right down at the computer and start working on it. Experience has shown that more time and effort is wasted using this method. Although the planning process takes time away from getting started quickly on production, in the long run the effective use of focused resources and the elimination of redoing or making multiple changes will result in a better product in a faster time. After discussing the planning steps, students will work in their groups to complete a content outline, a navigation map, a storyboard and a production timeline for their presentation. Then each student will have an opportunity to use the Wizard in PowerPoint and produce their first slide presentation.

Students will demonstrate the ability to:

1. Organize and prioritize ideas that have been generated by the group. (F/O&D)
2. Outline the presentation in a logical sequence. (F/O&D)
3. Employ good presentation skills and use technology in a supplemental/enhancing role. (F/O&D, ES-12)
4. Estimate the time requirements for each segment of the presentation. (F/PM)
5. Work collaboratively to set team goals, showing flexibility in accepting others' leadership. (F/TW, ES-10)
6. Respect different styles of communication and actively encourage contribution from all team members. (F/TW, ES-10)
7. Create slides that are easy to read. (T/PRE)

Prerequisites: Lesson 8-1

Content Required:

1) Importance of planning.
2) Description of a detailed design document
3) Issues about use of copyrighted material
4) Introduction to PowerPoint

Resources:

Some multimedia development texts have excellent examples of sections of a design document, especially storyboards. Any examples to illustrate these would be great.

PowerPoint Central is a great online source for tutorials, clip art, tips, and anything else anyone might need to know while using PowerPoint. It can be accessed through the Tools menu in the PowerPoint program.

Materials checklist:

- ✓ Transparency and handout of IT Notes (*JMOD8-2-1*) for each student
- ✓ Large pad of newsprint-type paper, enough for a couple of sheets for each group of students
- ✓ Black marker for each group of students
- ✓ Small post-it pads, one pad for each group of students
- ✓ Transparency and copies of storyboard template (*JMOD8-2-2*), twenty sheets for each group

Equipment checklist:

- ✓ Overhead projector
- ✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the IT Notes handout (*JMOD8-2-1*) to each student and then have the students gather in their groups to listen to the discussion. Pass out the remaining materials and the copies of the storyboard templates (*JMOD8-2-2*) to each group.
2. Explain that the purpose of this lesson is to plan the look and feel of their presentation. Emphasize how crucial good planning is to the overall success of the project.
3. Review the concept of the Detailed Design Document (DDD) that will be produced upon the completion of all of the planning steps. Point out that the groups have already accomplished Step 1 of the IT Notes during the previous lesson when they initially met in groups and answered their discussion questions.
4. Continue to introduce each step as it applies to the presentation being developed. Also, encourage the students to consider a consistent look or theme for visuals. Ask students to share examples as to how this might be done.
5. Address the issue of plagiarism by asking the students to explain why permission is necessary to use copyrighted material and what are the consequences if they don't get permission. Have students identify sources for public-domain clip art, pictures or any other types of multimedia elements that they might want to include in their presentations. List the sources on the board for reference.

Part 2 – Group Activities

6. Help the students complete their DDDs in the following manner:
   - Outline content – Using the post-it pads, instruct group members to record on a single post-it a significant fact or information which should be included in the presentation. The goal is for the groups to brainstorm and think of as much as possible during this first part to support the theme of their presentation. After they have exhausted their ideas, have the groups

work together to categorize and then to organize the content into a logical sequence by moving the post-its around on one of their big sheets of paper until everyone in the group is satisfied with the order. From this list, explain to the groups that each group should develop its outline and write it on another of the big sheets of paper, making changes until group members again agree on the final version. Have each group prepare a final typed version for their DDD.

- Navigation Map – Unless the groups will be using presentation software other than PowerPoint, all of the groups will have a linear flow. Instruct student groups to diagram the final layout of the post-its on an 8 ½ x 11 sheet of paper for the DDD.
- Storyboard – Have the groups use their final version of the outline on the large sheet of paper to determine what information should be included on each of the twenty slides. Tell the groups to divide the copies of the templates among the members and allow each member to complete a form for five of the twenty slides. Encourage the groups to then review each of their storyboard templates and make suggestions as to the best way to present the information on each slide. Have the groups record all of their comments and suggestions in the area for additional instructions on the form, as well as sketch out how it would look on the screen. All twenty sheets will also become part of the group's DDD.
- Production timeline – Have each student in the group prepare a timeline of the days available for the rest of the module and fill in the final presentation dates for the slide show. Instruct the group to analyze the tasks necessary to complete the planned presentation and then to divide these tasks among the members. Each student's timeline should list his or her name first, along with the assigned tasks and completion dates, followed by the rest of the group members with their tasks and completion dates.

Part 3 – Hands-on Computer Demonstration

1. Introduce to the students the PowerPoint software and explain the concept of the AutoContent Wizard for quick development of a slide presentation.
2. Explain that students will develop a simple presentation to familiarize themselves with the basic concepts and use of the program. When production starts in the next lesson, the students will concentrate on their assigned tasks/slides.
3. Using the IT Notes (*JMOD8-2-1*) as their content and the PowerPoint Wizard, guide the students through the development of a slide show. Point out the many choices for outline formats and ask the groups which might be appropriate for their presentations. Have them select the 'Generic' outline and modify the eight slides to match the eight steps on the IT Notes handout. Encourage the students to explore different outline choices and other features of the program, if time permits.

Assessment methods:

- Observation of group process in completion of content outline, navigation map, storyboards of the slide show and production timeline.
- Review and written feedback by instructor of content outline, navigation map, and storyboards.
- Assessment by instructor and students of completed PowerPoint presentations.

Instructor evaluation and comments for improvement

IT NOTES
Lesson 8-2

Never start production without first planning what you are going to do. Below are the steps necessary to begin the project and each document prepared becomes part of the **Detailed Design Document**. It is the DDD that is used throughout the authoring and production process to develop an accurate product.

1. Develop the project concept - a written description of the multimedia project:
    - Describes the actions of all components
    - Clarifies ideas and goals
    - Gives a clear understanding of the presentation's purpose
2. Outline your content:
    - Major headings will be titles
    - Subheadings will be bulleted items
3. Develop a flow chart or navigation map:
    - Defines the branching of the project
    - Slides are linear; Cards can be non-linear
    - Illustrates the choices the user will have on each screen
4. Develop the project storyboard-a graphic representation of each slide or card:
    - Provides an extension of the ideas in the project concept and outline
    - Includes everything like pictures, text, sound, animation and video
5. Prepare scripts for narration and text:
    - Shows how the content message is expanded
    - Stays with the purpose and content of the project
6. Consider copyrights:
    - Use non-copyrighted material
    - Request permission from authors or owners if using copyrighted material
7. Plan the production of graphics, sound, animation and video:
    - Illustrations to explain concepts
    - Charts to illustrate numerical data
    - Visuals help integrate material
    - Develop uniform color, backgrounds, graphic concepts
    - Consider communication of corporate image
8. Prepare the project timelines (and budget):
    - Done after the scope of the work is defined
    - Consider the activities needed and group members responsible for each activity
    - Start time and end time of each activity
    - Chart when each part of project must be completed by, who will do it, and what activity will be accomplished

Now the Production on the Computer Begins!

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JMOD8-2-2

Storyboard Template
Lesson 8-2

Name of slide:________________

Slide No.:________

Includes:
(Circle) Text Graphics Sound Animation Video

Additional instructions for each element:

Length of time (seconds) on screen: ______ 553

LESSON 8-3: Producing the Presentation *Approx. time: 1 class*

Lesson overview:
It's now time for the students to tackle their presentations!

Students will demonstrate the ability to:
1. Create, edit, and move an object. (T/PRE)
2. Format layout of text, slide color, and background. (T/PRE)
3. Troubleshoot and solve problems. (ES-12)
4. Use slide transitions and build effects. (T/PRE)
5. Choose from a list of slide layouts and use accordingly. (T/PRE)
6. Insert clipart or graphics into slide. (T/PRE)
7. Organize and prioritize ideas that have been generated by the group. (F/O&D)
8. Ask for clarification if further information is required. (ES-6)
9. Complete task in accordance with standard and timeline. (F/PM, ES-15)

Prerequisites: Lessons 8-1 and 8-2

Content Required:
1) Basic functions in PowerPoint
2) Techniques for enhancing slides

Resources:
PowerPoint Central is a great online source for tutorials, clip art, tips, and anything else anyone might need to know while using PowerPoint. It can be accessed through the Tools menu in the PowerPoint97 program.

Materials checklist:
- ✓ Detailed design documents for each group
- ✓ Each student's production timeline
- ✓ Computer disk for each student
- ✓ Copies of IT Notes (*JMOD8-3-1*) for each group of students

Teaching strategy:

Part 1 – Introductory Discussion
1. Remind the students of the following as the IT Notes (*JMOD8-3-1*) are distributed and groups are being formed:
   - Each student is responsible for five slides (if in groups of four).
   - Students can use the AutoContent Wizard to develop their part of the slide presentation. (Directions on combining all twenty of the slides will be provided in the next lesson.)

- Students need to save their slide show program on their own disk and monitor its size – all twenty slides will eventually have to fit on one disk! (Ask the students to calculate approximately how much space is available for each student's section.)
- Every group has a copy of the IT Notes which provide a synopsis of features and functions in PowerPoint. Please note the "REQUIRED" features that must be incorporated in their slide show.
- As students develop their slides, they should constantly verify that they are following the specifications in the group's detailed design document.

2. Address any questions the students might have and then allow them to begin their projects.

Part 2 – Hands-On Computer Activity

3. As the students work on their individual slides, encourage them to share ideas or problems with their group members. Tell them it is all right for the group to change the detail design document along the way if problems are encountered that necessitate changes.
4. Monitor the progress of the groups and offer assistance when needed.

HOT Activities:

1. At the end of each class period, have the student groups evaluate their progress based on each individual's production timeline. Instruct the groups to develop contingency plans if the work is not proceeding on schedule and note those alternatives on each timeline.

Assessment methods:

- Students and instructor evaluate quality and usefulness of presentations.
- Observation by instructor of students working on their slides.
- Self-assessment by students of progress in learning and using presentation software.

Instructor evaluation and comments for improvement:

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IT NOTES
Lesson 8-3

PowerPoint Main Features and Program Tips

1. Opening, Saving, Closing, a New Presentation or Existing Presentation PowerPoint's Views and the Toolbar:
   Slide View
   - Toolbar: promote, demote, move up, move down, font size, bold, italic, underline text shadow, bullet, line, fill, object shadow, pick up styles, slide show, view scale, home view.

   Outline View
   - Toolbar: promote, demote, move up, move down, font size, bold, italic, underline, text shadow, bullet, draft text, titles only, pick up styles, apply styles, slide show, view scale, home view.

   Slide Sorter
   - Toolbar: transition dialog, transition effect, build dialog, pick up color scheme, apply color scheme, slide show, view scale, home view.

   Notes View
   - Toolbar: promote, demote, move up, move down, font size, bold, italic, underline text shadow, bullet, line, fill, object shadow, pick up styles, slide show, view scale, home view.

2. The Tool Palette:
   - Selection tool
   - Text tool
   - Line tool
   - Arc tool
   - Freeform tool
   - Rectangle tool
   - Ellipse tool
   - Shape tool
   - Graph tool

3. Masters: Slide, Notes, Handout, Outline:
   - To create slides that follow the Slide Master, click New Slide when you are in Slide View. Do not save slide presentation and start all over with a new slide presentation because the slides will not be connected. They will be in different slide shows.

4. Graphics: ***(Required)***
   - Create a graphic in PowerPoint using the Drawing and Text tools.
   - Create a graphic in another application and cut and paste onto PowerPoint slide.

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- Import a graphic using Insert from the Object menu.
- Find an already designed piece of clip art and insert it on the slide, using Open Clip Art from the File menu.

5. Objects:
    - Text, Pictures, Lines, Shapes you create or import
    - Attribute features such as Line, Fill, Shadow, Embossing, Color, Shape, Text
    - Shape, Frame, Resize handle, Adjustment handle, Control handle
    - Grid and Guides
    - Arrange Objects on the slide
    - Move Objects on the slide
    - Change the look of an Object that contains text.
    - Turn a PowerPoint object into a picture:
        - Select the objects, Copy, go to the slide where you want it, use Paste Special.
        - Now you can recolor it, resize it, or crop it, but you cannot edit it with the tools.

6. Text:
    - Adding Text to Title and Body Objects on the Slide or in the Outline, becomes part of the bulleted entries for Slide Builds
    - Formatting the Master Title or Body
    - Adding Text to slides Using the Text Tool
    - Clicking outside of the Body Object use Text tool on Tool Palette, does not act in Slide Build
    - Selecting and Editing Text
        - Select text, click and drag mouse to select; then use Toolbar for Font size, Italic, Bold, Underline, or use Menu.
        - Formatting and Aligning Text
        - Adding Text to a Shape
        - Changing the Appearance of Objects with Text
    - You can substitute one font for another throughout and entire presentation.
    - Go to Text Menu, choose Replace Fonts, choose replacement fonts, and click OK.
    - Use Check Spelling

7. Defaults:
    - Initial Default Settings are on when you open PowerPoint, for instance the Graph button on the Tool Palette is set to a Histogram.
    - Can change default presentation.
    - Slide Master Title and Body are set at Defaults, which you can edit.
    - Can change defaults and settings as you use PowerPoint.

- Indicators are:
    - diamond--indicates a default setting
    - bullet--indicates an existing choice, a selected object, a chosen view, or an option in a dialog box.
    - checkmark--indicates a feature is turned on.
- Change by:
    - Selecting object and choose appropriate attribute.
    - Create an object that has all the attributes that you want to use as defaults; select it; then click on the Pick Up Style button on the Toolbar, then choose Apply to Defaults from the Edit Menu.

8. Outlines from Other Applications:
    - Open up PowerPoint and choose Open from the File Menu.
    - Open File dialog box appears and select Outlines in the List Files of Type Box.
    - Select your RTF or Plain Text file and click OK.
    - PowerPoint imports your files as the outline for your presentation.
    - Edit your imported outline in the Outline View.
    - If you have already started slides for your presentation you can add your RTF outline by going to the slide after which you would like the outline to be inserted and choose Insert from the Edit Menu and choose Outline, etc. as before.
    - Create and work with slides in the Outline View.

9. Slide Masters and Templates: ***(Required)***
    - After you create one or more slides in Outline view, view them in the Slide View.
    - PowerPoint uses the Default Slide Master Title and Body, but you can edit these if you want.
    - Format of Slide Master applies to every slide in presentation.
    - If you change the Slide Master it changes every slide in the presentation.
    - PowerPoint contains 160 Templates that have already designed masters and color schemes for your use if you choose to use them. These have been created in families and each design comes in four versions: 35-mm slides on-screen slide show, color overheads, and black and white overhead.
    - You can apply a Template to a presentation at any time as you create the slides. Use Apply Template from the Menu. Open the VIDSCREN folder and choose an on-screen template of your choice.
    - You can create your own design for the Slide Master template.
    - Only the Master Title and Master Body appear in the Outline.
    - Slide Builds can only be used with Master Title and Master Body but other text and graphics may be added to a slide using the Tool Palette.

10. Modifying the Slide Master:
    - Master Title:
        - You can change the text, font, size, style, color, frame, fill, shadow, shape, deleting and/or adding, and sizing of the Title on the Slide Master and it will make the changes automatically on all slides.
        - To add page numbers to the Slide Master: Select the Text tool, and click where you want the slide number position. Type Slide Number and press the SPACEBAR. Choose Insert from the Edit Menu, choose Page Number, and ## appears where the number will be positioned on all the slides. Reposition if necessary or just type ## for Page Numbers, // if you want the date of printing.
    - Master Body:
        - Make changes on the Master Body on the Slide Master. Select the Master Body and select the paragraph you want to format.
        - Align, Font, Color, or Size in the Text Menu.
        - Size Plus or Minus on the Toolbar.
        - Text Editing button to change to italics, boldface, underlining, or shadowing.
        - Line, Line Style, Fill, Shadow, Change Shape form the Object Menu.
        - Use the Show Ruler from the Text Menu to adjust the tabs, margins, indents, or indent size: upper triangle sets the indent for the first line of a paragraph, and the lower triangle sets the indent for the rest of the paragraph.
        - Choose Bullet from the Text menu and a dialog box will appear to reformat Bullets.
    - Background: ***(Required)***
        - Can be deselected for individual slides if you don't want it.
        - Shade the Background on a slide by choosing Color Scheme from the Slide menu, then choose Shade Background and make choices.
        - Add background items to Slide Master Background that you want to appear on all slides, such as art, logos, names, date, time, page number.
        - Background items can be added to any master:
            - Choose Slide Master from the View menu.
            - Create (draw or type), paste, or insert a graphic object on the Slide Master.
            - Place the graphic where you want it to appear on all your slides.

11. To place a Graph in a slide:
    - If you are not going to add text to the Text Body, delete it. If you will be adding some, then you could resize and reposition it out of the way of your Graph.
    - Click on the Graph tool on the Tool Palette. The Default Graph is a Histogram, or column graph. If you want another type of graph, pick a different type from the Gallery Menu. There are 12 different categories of graphs with a total of 84 formats. And you can choose from four to ten built-in formats for each category. You can also custom format to create your own graph design!
    - Drag a box on the slide the size and shape you want your graph.
    - Graph's Data sheet appears. Type in your data. Data series names go in the first column, and the first row holds the Labels for the Tick-marks that are along the horizontal base of the Histogram. The Graph is made after the data is entered.
    - To resize the Graph, resize the Chart Window.
    - To Return your Graph to PowerPoint so you can see how they look on the slide, go to the Graph File Menu, choose Quit and Return, Yes, or
    - From the Graph File Menu, choose Update. This method keeps Graph open.
    - To Return a Graph to its original size in PowerPoint, hold down the SHIFT key and double-click one of the graph's resize handles.
    - Use PowerPoint Color Scheme on your Graph.
    - A Microsoft Excel chart can be opened in Graph by going to Graph File Menu, Open Microsoft Excel Chart, select file you want, click OK, and Graph will convert it.

12. To embed a Microsoft graph, equation, Excel worksheet into PowerPoint:
    - Open the slide where you want a graph or an object created in Word, Excel, or any other application program you have on your computer.
    - Go to Edit Menu, choose Insert, Object, choose the application, click OK.
    - The source application becomes active so you can create the graph.
    - To back to Power Point, choose Update.
    - Save graph document in application.
    - You could also Copy the document in the source application and then paste on slide.

13. To share information between files and applications is called Publishing and Subscribing. You can create publishers to use with PowerPoint in the source application.
    - Select the object you want to be used in your presentation.
    - Go to File Menu, choose Create Publisher.
    - Type a name for the edition.
    - Click Publish button.

- Switch to PowerPoint and select the place where you want the graph.
- Choose Subscribe To in the File Menu.
- Select the edition you just created.
- Whenever you update the Microsoft Excel file; it updates the edition file and the PowerPoint presentation automatically

14. You can do this same thing to publish a PowerPoint slide in another application. A Subscriber is a publisher that is inserted in a document such as a PowerPoint presentation.
    - Open to a slide where you want information
    - Go to Edit Menu, choose Subscribe To, select edition you want to subscribe to.
    - Click Subscribe button.
    - You can recolor subscribers or embedded objects.

15. To Paste a slide into another application document:
    - Select the slide, Copy, Open the other application document, and Paste.

16. Adding a QuickTime Movie or Sound to a PowerPoint presentation:
    - Open your PowerPoint presentation (If QuickTime is not available the Movie attribute will not be in bold).
    - Create a slide or go to the slide where you want to add the movie.
    - Go to File Menu, Insert, Movie, and pick your file, click on Insert.
    - If the Movie or Sound is in another document or presentation, open that file first, and Copy and Paste it into your presentation (this process uses the Clipboard).
    - To edit the Movie, in the Slide View, go to the Edit Menu, Movie, and Show Controller.
    - Students can copy and paste Movies off the Internet.

17. Two ways to access applying Transitions: ***(Required)***
    - In Slide View, choose Slide Menu, Transition. The Transition applies only to the current slide.
    - In Slide Sorter, you can set transitions for one or more slides by holding down the shift key and clicking on the slides to have the same transition, then click the Transition button on the Toolbar.
    - Transition box allows you to pick a specific Transition or set it on Random. Also select Slow, Medium, or Fast. The actual speed depends on the amount of RAM on your computer. If you don't have enough RAM PowerPoint will not display Transitions. Increase RAM to speed up processing. Generally, Fast Transitions are less distracting from the Presentation.
    - Automatic Advance after so many seconds is usually for unattended slide shows. Speakers using a slide presentation usually don't know

how many seconds to pace themselves, and either come up too short or too long.

18. Two ways to create a Build Slide:
    - In Slide View.
    - In the Body Object, bullet each line item or paragraph.
    - Go to the Slide Menu, choose Build, and the options you want, click OK.
    - In Slide Sorter View.
    - Select slide and click on the Build Button on the Toolbar.

LESSON 8-4: Practice Makes Perfect *Approx. time: 1 class*

Lesson overview:
By now the slide presentation should be taking shape as each member of the student groups nears completion of his or her section.

This lesson provides time for the groups to proof a printed copy of their slide show content and verify that they have met the specifications in the detailed design document. All of the slide show sections will then be assembled by the group to produce the entire presentation. At this time students will practice the presentation of their slide show for its premiere and evaluation in the next lesson.

Students will demonstrate the ability to:
1. Communicate clearly and concisely to the appropriate audience. (F/O&D)
2. Listen effectively and use appropriate language, style, and format based on the needs of the project and audience. (F/O&D, ES-5)
3. Produce multiple drafts that demonstrate knowledge of proofreading. (F/D&BC)
4. Work with a team to peer edit. (F/D&BC, ES-10)
5. Share information and explain procedures to another team member. (ES-7)
6. Troubleshoot and solve problems in presentation software. (ES-12)
7. Use feedback to identify areas for improvement in the presentation. (F/O&D)

Prerequisites: Lessons 8-1, 8-2, and 8-3

Content Required:
1. Printing techniques
2. Combining slides from different programs

Resources:
PowerPoint manual or available tutorials

Materials checklist:
- ✓ Detailed design documents for each group
- ✓ Each student's production timeline
- ✓ Computer disk for each student
- ✓ Copies of IT Notes (*JMOD8-4-1*) for each student

Equipment checklist:
- ✓ Printers with paper

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of this lesson is to proof and to practice the final version of the group's combined slide shows for presentation and evaluation in the last lesson.
2. Since printing takes some time, it may be necessary to schedule the printing of each student's slide show, depending on the resources in the computer lab. Print all of the copies in black and white. (Color printing might be considered after the presentations are finalized.)
3. Conduct a review of the criteria that will be used to evaluate the presentations. Ask the students to identify each component that should be included in the evaluation. For example, following the instructions instructor prepared theme and parameters (or Jordan's memo) and in the IT Notes (*JMOD8-3-1*) of Lesson 8-3 for required features. Record their responses on the board and add any that might have been missed. Emphasize to the students that these are the areas that they should also consider while proofreading each group member's work. Underline any of the criteria that are particularly important or that the students might seem to be forgetting.
4. Distribute the Step-by-Step handout (*JMOD8-4-1*) to each student. Allow time for the students to review the information and ask any questions before they start working in their groups.

Part 2 – Hands-On Computer Activity

5. Monitor the progress of the groups and offer assistance in as they finalize the preparations for their slide show presentations.
6. Make sure that at the end of the activity, all of the groups have proofed and pasted their slides into one presentation according to the step-by-step instructions.

HOT Activities:

1. At the end of the class, have the student groups evaluate their progress based on each individual's production timeline. Instruct the groups to develop contingency plans if the work is not proceeding on schedule and note those alternatives on each timeline. (This could be something like returning to the computer lab after class hours or deciding which slides they could cut from the presentation.)

Assessment methods:

- Observation and evaluation by instructor of team process as students complete production.
- Assessment by instructor of written versions of slides that have been proofed by students and on which has been feedback provided.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 8-4

Proofing a printed copy:

1. Print a copy of each group member's slide show presentation. To print, click Print under the File Menu and then make a selection in the Print What List.

   Note: It is possible to create custom handouts by exporting your presentation to Microsoft Word and presentations can be printed on paper or transparencies.

2. Pass around each printed section of the slide show to each group member for proofing of the content. Also, review each section according to your criteria in the detailed design document to be sure that nothing has been overlooked by your group.
3. After each section has been thoroughly reviewed by every group member, group members should make any changes, revisions, or corrections required to their section.
4. Copy each section to its disk and then choose one group member's computer to be the master computer for combining all sections of the slide show.

To paste slides in PowerPoint:

1. Select the slides from the source presentation either in Slide Sorter or Outline View.
2. Go to the Edit Menu, choose Copy. The Copy is placed on the Clipboard
3. Open the new presentation.
4. Position the cursor where you want to add the slides, either in the Outline or Sorter View
5. Go to Edit Menu, choose Paste.
6. Your slides are Pasted into the new presentation.

To time the presentation:

1. Go to the File Menu, choose Slide Show.
2. Click Rehearse New Timings.
3. Click Show.
4. Set the Timing.

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LESSON 8-5: Slide Show Presentations *Approx. time: 1 class*

Lesson overview:

Today is the big day. The premiere of the student's slide show presentation. Each student group has an opportunity to show off their accomplishment during this lesson. During the presentations, evaluations of the slideshow will be conducted by the individual students as well as by the instructor.

Students will demonstrate the ability to:

1. Create an effective and interesting presentation that communicates clearly the topic and appeals to the target audience. (T/PRE)
2. Employ good presentation skills and use technology in an enhancing role. (T/PRE)
3. Evaluate requirements and identify missing or conflicting information. (ES-6, F/ANL)
4. Listen effectively to the group presentations. (ES-5)
5. Work in teams to complete task. (ES-10)

Prerequisites: Lessons 8-1, 8-2, 8-3, and 8-4

Content Required:

1) Completed group presentations

Resources:

Information sources listing tips for good presentation

Materials checklist:

- ✓ Computer disk with group's slide show presentation
- ✓ Copies of Student Evaluation Form (*JMOD8-5-1*) for each student
- ✓ Copies of Instructor Evaluation Form (*JMOD8-5-2*) for each group

Equipment checklist:

- ✓ Computer display projector

Teaching strategy:

Part 1 – Demonstration of Slide Show Presentations

1. Distribute a Student Evaluation form to each student and provide some time for them to review the points that will be used for their evaluation of the group slide shows. Answer any questions or clarify their task, if necessary. Some of the points may be defined in terms of the context.

2. Determine a sequence (random drawing, etc.) for the presentations of the slide shows and take up the disk from each group with their master copy. As part of the evaluation, the disk should be ready to open in the PowerPoint program where the computer display projector is set up.
3. Allow the groups to introduce themselves and give the title of their slide show before it is presented so that the students have time to fill in the headers on their evaluation forms before the presentation starts.
4. Run the slide show for each group. Provide enough time between each of the presentations for the students to complete their evaluations.

HOT Activities:

1. As students review the presentations, ask them to consider recommendations for improving each of the presentations and to fill this information in under 'Comments' or on the back of their evaluation sheets.

Assessment methods:

- Student and instructor evaluations of each group making presentation.
- Self-assessments by students of group accomplishments.
- Observation and assessment by instructor of participation by students in group presentations and of the evaluation process.

Instructor evaluation and comments for improvement:

JMOD8-5-1

Student Evaluation Form
Lesson 8-5

Project Title ________________________________

Group Members ________________________________

Date ________________

Evaluator ________________

RATE the project on the 10 characteristics below using the scale: 1 - not complete 3 - fair 5 – good. Then add up all scores and give a total overall rating. Fill this score in the blank at the end of the project. 50 points are possible.

Page Layout ________

Color Appeal ________

Overall Design ________

Appropriate Graphics ________

Easy to Understand ________

Creativity ________

Originality ________

Use of Features ________

Client Appeal ________

Overall Presentation ________

Total Points ☐

Comments: ________________________________

____

What did you learn? ________________________________

JMOD8-5-2

Instructor Evaluation Form
Lesson 8-5

Project Title ______________________________

Group Members ______________________________

	Possible	**Actual**
Format (40 pts.):		
20 Slides	10	______
Use of any Multimedia elements:	10	
Graphics		______
Sound		______
Animation		______
Other: ____________		______
Proper length	10	______
File size of no more than 1.44M	10	______
Content (40 pts.):		
No more than 5 bullets per slide	10	______
Other data considerations: ____________ ____________ ____________ ____________	30	______
Overall Design (20 pts.):		
Use of transitions	5	______
Use of build effects	5	______
Originality and creativity	10	______
TOTAL SCORE:	100	☐

Comments: ______________________________

____

____

Module 9:
Taking Another Look

Module 9 – Taking Another Look

Learner Outcomes:

Computer Trends in Business and Society

1. Understand and explain how computers impact the operation and management of business and society.

Self Learning

2. Apply and evaluate new learning in the context of learning goals.

Team Work

3. Organize and work in a team setting.
4. Recognize expertise and learn from others
5. Work and communicate effectively with persons of different backgrounds.

Documentation and Business Communication

6. Create and present accurate and effective communication tailored to the specific purpose and needs of the audience.

Prerequisites: General knowledge of computers and terminology

Total Class Time: Approximately 10 hours

Outside readings and other resources:

The CD-ROM Revolution, Devra Hall
The Road Ahead, William Gates
I Sing the Body Electronic: A Year With Microsoft on the Multimedia Frontier, Fred Moody
Out of Their Minds: The Lives and Discoveries of 15 Great Computer Scientists, Dennis Elliott Shasha & Cathy A. Lazere
Technology and Privacy: The New Landscape, Philip Agre
Neuromancer, William Gibson
The Hacker Crackdown: Law and Disorder on the Electronic Frontier, Bruce Sterling
Hackers: Heroes of the Computer Revolution, Steven Levy
Computerization and Controversy: Value Conflicts and Social Choices, Rob Kling

Module 9 – Taking Another Look

Module overview:

There are a lot of jobs out there. Sometimes, finding the right job is a job in itself! Over the next few days, you will explore many different types of job opportunities and think about the type of career that is best for you. At the same time, you will see the impact that computer use has had on all types of businesses and on the job market.

Once you have decided which area you would like to explore as a career, the next step is to prepare a resume and understand the job hiring process. You will take a look a different formats for a resume and consider types of questions you might be asked in an interview. Finally, you will have an opportunity to experience a practice interview session.

For your portfolio, you will prepare:

1. A personal inventory list of your skills and experience.
2. A professional resume for yourself.
3. A sample list of job interview questions.
4. A completed sample employment application.

Lesson Plan Titles:

- 9-1 Computers and the Job Market
- 9-2 Let's Hear From Them
- 9-3 Preparing Your Resume
- 9-4 Take a Look at the Complete Picture
- 9-5 Practicing for the Real Thing

Taking Another Look

LESSON 9-1: Computers and the Job Market *Approx. time: 1 class*

Lesson overview:

As students begin to think about careers, they will discuss the many ways that computers have impacted all types of businesses. They will then conduct a personal inventory of their marketable skills, experience, and accomplishments.

Students will demonstrate the ability to:

1. Describe how computers have eliminated, created, and changed jobs. (T/CT)
2. Explain how computers are used in today's business and society. (T/CT)
3. Listen effectively and contribute to group discussions. (ES-5, ES-10, F/D&BC)
4. Stay on task. (ES-15)
5. Inventory personal skills and knowledge. (F/SL)

Prerequisites: General knowledge of computers and terminology

Content required:

1) How computers are used in business today.
2) The impact computers have had on jobs/businesses.
3) Understanding of resume preparation steps.

Resources:

Although some notes are provided for discussion, the challenge of the instructor is always to be looking for new articles or stories about careers in the community. Review web sites regularly, especially of government or associations, to identify additional articles that may have even more current data to share with the class.

Examples of job listings: classified section of the local newspapers or trade magazines for different industries or web sites such as Monster.com or America's Job Bank at www.ajb.dni.us. Students can set up accounts in AJB and use the Resume Builder.

Materials checklist:

- ✓ Handout of Module Overview (*JMOD9-Ovr*)
- ✓ Handout of Discussion Topics (*JMOD9-1-1*) that may need to be customized
- ✓ Handout of Personal Inventory Worksheet (*JMOD9-1-2*)

Equipment checklist:

- ✓ Overhead or computer projector if instructor prefers to display samples of handouts during class discussion.

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Contact several local employers and invite them to the class to share their insight into the current job market in their industry as part of Lesson 9-2. Explain to the speakers that you would also like for them to talk about the use of computers in their business as well as the computer skills they look for in new hires. Choose speakers that represent careers or job areas with the most student interest and modify the sample interview questions (*JMOD9-2-1* and *JMOD9-2-2*) if necessary.

Part 2 – Group Discussion Activity

2. Distribute the Module Overview (*JMOD9-Ovr*) and ask members of the class if they have a specific career in mind. Allow time for them to review the tasks to be completed in the module. Have students who may already have worked at a job share some of their job search experiences.
3. While distributing the Discussion Topics Handout (*JMOD9-1-1*) and any other articles, have the students divide up into discussion groups
4. Explain to the students that the purpose of the first part of this lesson is to take another look at how computers have impacted many different jobs, both high and low tech.
5. Instruct the groups to conduct a brainstorming activity to identify examples in each of the different topic categories on the handout.
6. Have the students record their group's results on their handout.
7. Allow enough time for all of the groups to discuss their ideas and come up with sufficient examples.

Part 3 - Class Discussion Activity

8. Bring all of the groups together for a final discussion on the results of what they came up with in their groups.
9. As each group reports on their discussion, ask additional questions of the individual group members as well as the other class members to clarify or relate their ideas to others' experiences.

HOT Activities:

1. Pass around the examples of job listings to each of the groups and ask the groups to review the different types of job qualifications. Have the students then analyze these to form a list of common qualifications or requirements identified in a majority of the examples (i.e.: specific computer skills, cover letter with salary requirements, attention to detail, willingness to travel, enthusiasm, etc.).
2. Disperse the discussion groups and distribute a Personal Inventory Worksheet (*JMOD9-1-2*) to each student. Explain that the major steps in developing a resume include 1) taking an inventory of what one brings to the job, 2) deciding on a proper format, and 3) preparing the actual document.

Ask the students to consider what their "marketable" skills or accomplishments might be and list these on the handout. Mention such areas as education, honors or awards, activities, other work experience, community involvement, and personal attributes to give the students ideas or help.

Assessment methods:

- Instructor observes students working in discussion groups.
- Results of discussions evaluated by other students in class, as well as instructor.
- Completion by students of Personal Inventory handouts and review of handouts by instructor

Instructor evaluation and comments for improvement:

Discussion Topics
Lesson 9-1

1) **Examples of how computers are used in business and society today:**
   a) Create and design such things as documents, graphics and engineering designs, or other software.
   Examples: ____________________

   b) Communicate/Send Documents.
   Examples: ____________________

   c) Keep track of, obtain and analyze information.
   Examples: ____________________

   d) Develop reports/communications.
   Examples: ____________________

2) **Computers can be used today in various ways that help organizations operate more efficiently:**
   a) Integrate communication systems throughout an organization.
   Examples: ____________________

   b) Increase the efficiency of manufacturing products.
   Examples: ____________________

3) Impact of computers on jobs/businesses:

a) Computers are now used in almost every economic sector and every occupation.
Examples: ______________________________
____
____
____

b) Jobs that used to be done by hand are now done by computer, e. g., keeping track of inventories.
Examples: ______________________________
____
____
____

c) Computers are being used to make the workplace and workers more efficient . At the same time, some jobs are eliminated and others are created.
Examples: ______________________________
____
____
____

4) Different types of companies in the computer industry:

a) Manufactures of computers and computer-related equipment.
Examples: ______________________________
____
____
____

b) Developers of computer software.
Examples: ______________________________
____
____
____

c) Information systems professionals.
Examples: ______________________________
____
____
____

5) **Future developments in computer systems:**
   a) Huge changes in equipment and software including:
      i) Increased usage of portable computing equipment, such as notebook and handheld computers.
      ii) Increased competition among manufacturers will lead to much faster and less expensive computers. What changes have you noticed with regard to improvements in computers and computer prices?
      iii) Worldwide communication networks will allow users to access data or send messages from any location.
      iv) Easier access to networks, such as the Internet.
      v) Virtual reality will be common for training and recreation.

   Examples: ____________________

   b) The expansion of networks which will result in users having a wide variety of data and information:
      i) The Automated Office with various communication machines connected to each other. In an office, electronic devices such as computers, FAX machines, printers and computerized telephone systems can all be connected so that they can share information.
         (1) Microphones, speakers, and video cameras that will be incorporated into desktop computers, and automatic dialing will be accessible through any computer application.
         (2) Incoming calls, including the name and photo of the caller (if on file) will be displayed on the user's screen.

   Examples: ____________________

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Personal Inventory Worksheet
Lesson 9-1

Taking Another Look

LESSON 9-2: Let's Hear From Them *Approx. time: 1 class*

Lesson overview:

In this lesson, students listen to the guest speakers who will share real world experiences about the job market. They will also begin to consider how they will format their own resume, after reviewing samples using an online search.

Students will demonstrate the ability to:

1. Listen effectively to the guest speakers and ask questions to clarify information. (ES-5, ES-6)
2. Access information from online sources using the computer. (ES-13)
3. Analyze and organize information in a logical format. (F/D&BC)
4. Describe the career opportunities available in the information processing industry. (T/CT)

Prerequisites: Module 9-1

Content required:

1) Information provided by guest speakers
2) Resume format options

Resources:

Guest speakers from different industries

Web sites that contain resumes or information about resume formats. Try 4RESUMES.Com for an excellent source as well as conduct a simple search on 'resume' for many individuals who have their resumes listed already on the web. Also, use the Resume Builder at America's Job Bank.

Materials checklist:

- ✓ Handout of Sample Business Interview Questions (*JMOD9-2-1*)
- ✓ Handout of Sample Computer Interview Questions (*JMOD9-2-2*)
- ✓ Handout of Resume Format Worksheet (*JMOD9-2-3*)

Teaching strategy:

Part 1 – Pre-Lesson Instructor Preparation

1. Confirm the time with the invited guest speakers for today's lesson.
2. Arrange the classroom in a panel discussion layout if possible.

Part 2 – Introductory Discussion

3. Prior to the arrival of the guest speakers, distribute the two interview questionnaires (*JMOD9-2-1* and *JMOD9-2-2*) to the students and review with them the different kinds of questions on the handouts.

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4. Instruct them to add additional questions that they would also like to ask during the panel presentation if there are other topics in which they are interested that are not covered by the handouts.

Part 3 – Presentation by Guest Speakers

5. Introduce the guest speakers and ask each speaker to give a brief description of their professional background.
6. Conduct the panel discussion providing time for the students to ask their prepared questions or make comments about what they just heard. Have some questions prepared that you can ask to start the ball rolling. And, of course, at the end ask the students to join you in thanking the speakers.
7. After the speakers have left, you may want to suggest that the students write them Thank You notes.

HOT Activities:

1. Distribute the Resume Format Worksheet (*JMOD*9-2-3) and explain the major formats of resumes such as functional and chronological. Ask students to explain what the differences would be in these formats.
2. Have the students perform a simple Internet search using 'resume' as a keyword or direct them to a pre-identified site where they can view examples of resume formats. Ask them to review sample resumes and find a format that they would like to use personally. Instruct them to make notes about the format on their worksheet or print a copy of the sample and attach to the worksheet.

Assessment methods:

- Evaluation by instructor of students participation in panel discussions with guest speakers.
- Instructor and students assess usability of resume formats identified by students.

Instructor evaluation and comments for improvement:

Business Interview Questions
Lesson 9-2

Questions You Could Ask Someone About
The Impact of Computers on Their Business

Below are questions you could ask people whose businesses use computers. You don't need to ask all these questions. You may want to ask other questions, especially if other questions occur to you during the interview.

- How does your business use computers? What tasks are they used for?
- Do you use your computer in your position to communicate with people? How do you do this? (Possible answers are writing memos, getting/sending E-mail, sending documents they've prepared to another person via the computer).
- (If they haven't mentioned E-mail, ask if they have E-mail at work.) If they get E-mail, ask: What do you like about E-mail? What do you dislike about it?
- What are the advantages, if any, of computers in your business? (You can probe with questions such as: Have they made jobs easier? In what ways? Have they made jobs more interesting? In what ways?).
- What are the disadvantages, if any, of computers in your business? (You can probe with questions such as: Have they made jobs more difficult? In what ways? What do you wish you could change about the computer use at your business?).

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Computer Interview Questions
Lesson 9-2

Possible Questions That You Could Ask Someone In the Computer Industry

- How would you describe your job? What tasks do you do?
- How hard is it to get a job like yours? What would someone need to do to get a job like yours?
- What training is required for your job?
- What skills are required for your job?
- What type of person would be good at a job like yours?
- What do you like about your job?
- What do you wish you could change about your job?
- Do you feel that you have security in this field? Why do you say that?
- Do you feel that there are a lot, some or very few opportunities in your job area? Why do you say that?
- Would you recommend your type of job to a good friend or family member? Why do you say that?

Resume Format Worksheet
Lesson 9-2

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LESSON 9-3: Preparing Your Resume

Approx. time: 1 class

Lesson overview:

Students will prepare the first draft of their resume in this lesson and then practice editing the resume of a partner. After the editing activity, students will develop a list of possible interview questions to be used during the interview role-play in the last lesson

Students will demonstrate the ability to:

1. Use the appropriate language, style, and format for the preparation of a resume. (F/D&BC, ES-4)
2. Work with a partner to peer edit. (F/D&BC)
3. Access information form manuals and computers. (ES-13)
4. Work harmoniously with diverse races, sexes, ages and cultures (ES-11)
5. Analyze and organize information; ask for clarification if required. (F/D&BC, ES-6)

Prerequisites: Lessons 9-1 and 9-2

Content required:

1) Personal Inventory information
2) Selected format for resume
3) Information about developing resumes

Resources:

There are many web sites which offer tips and techniques for preparing 'killer' resumes. Utilize some of the sites that the students found during the previous lesson like 4RESUMES.com.

Resume templates provided by word processing program

Materials checklist:

- ✓ Students' completed worksheets with Personal Inventory (*JMOD9-1-2*)
- ✓ Students' completed worksheets with selected resume format (*JMOD9-2-3*)
- ✓ Handouts with help information on resume writing such as the sample provided (*JMOD9-3-1*)

Equipment checklist:

- ✓ Computer display projector if instructor requires for writing demonstration

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Teaching strategy:

Part 1 – Preparatory Classroom Discussion

1. Ask students to gather their completed Personal Inventories and the worksheet containing the format of a resume that they selected.
2. Conduct a short discussion by having students share a brief description of the formats that were chosen.
3. Distribute the sample tip sheet (*JMOD9-3-1*) or other handouts with resume writing techniques.
4. Review the different suggestions, emphasizing or explaining the importance of each point. Ask the students to contribute also reasons why they think these tips are important.
5. Conclude the discussion by addressing the issue of accuracy. Have students identify ways that false information (whether intentional or not) on their resume will hurt their chances of getting or keeping the job.

Part 2 – Individual Writing Assignment

6. Allow time for students to compose the first draft of their resume. Keep in mind that many word processors provide easy-to-use templates for resumes that could be used by students if they are struggling with the format or content preparation.
7. Remind them to proofread the content and check for spelling errors before printing out their first draft.

HOT Activities:

1. After all of the students have printed their drafts, instruct them to choose partners for reviewing their resumes. Have students exchange resumes with their partner and edit the document closely.
2. Before returning the resume to their partner, ask students to develop five sample interview questions based on the information in the resume and prepare a written document with the questions to be turned in to the instructor.
3. Have the resumes returned to their owners for revisions and final printing before handing in to the instructor.

Assessment methods:

- Review and feedback given by instructor for final drafts of students' resumes.
- Observation of students editing their partners resumes conscientiously.
- Evaluation of sample interview questions developed by students.

Instructor evaluation and comments for improvement:

Top Ten Technical Resume Writing Tips
Lesson 9-3

From web site for Taos Mountain
http://www.taos.com/working/tips

1. List your technical knowledge first in an itemized fashion.
2. List your qualifications in order of relevance, from most to least.
3. Quantify your experience wherever possible.
4. Begin sentences with action verbs.
5. Don't sell yourself short.
6. Be concise.
7. Omit needless items.
8. Have a trusted friend review your resume.
9. Proofread, proofread, proofread.
10. Laser print it on plain, white paper.

Taking Another Look

LESSON 9-4: Taking a Look at the Complete Picture *Approx. time: 1 class*

Lesson overview:

Although the resumes have been completed by the students, there are still more considerations when looking at the entire hiring process. Student will discuss in this lesson the needs for meeting the employers' requests, for completing an application that reinforces the information on their resume, and for being prepared for the actual job interview.

Students will demonstrate the ability to:

1. Analyze and organize information; ask for clarification if required. (F/D&BC, ES-6)
2. Communicate clearly and concisely to the appropriate audience. (F/D&BC, ES-8)
3. Apply effectively new knowledge or skill. (F/SL)
4. Respond appropriately to supervision and follow directions. (ES-3, ES-4)

Prerequisites: Lessons 9-1, 9-2, and 9-3

Content required:

1) Completed resumes by students
2) Additional information about the hiring process

Resources:

Books or articles identifying successful job search techniques
Web sites with interview tips, such as www.pohly.com or
www.careerperfect.com

Materials checklist:

✓ Two Employment Applications, one a copy and the other an original for each student. These may be purchased at a local office supply store in pads of 25. Make one set of copies that the students will use as practice.

Equipment checklist:

✓ Computer display projector if instructor requires for demonstration of completing the employment application

Teaching strategy:

Part 1 – Introductory Discussion

1. Begin the discussion by asking students to consider the following questions:
   - Why do employers request a cover letter? (*Can you follow instructions?*)

- Who do employers often ask for a salary history? *(If they can't afford you, then an interview is a waste of your time as well as theirs.)*
- Why do employers have you fill out an application even though you have just given them your resume? *(It's one way to verify that the information on your resume is consistent and complete. Other times there are specific questions on the application for which you may not have provided information on your resume. Or, they just want to read your handwriting!)*
- Why would an employer schedule an appointment for a job interview at an odd time? *(Punctuality is a plus and this could be a simple test of yours.)*
- Before you go on the interview, do you drive by the location to make sure you know where the place is? *(Nothing is worse than being late or missing an interview because you got lost.)*
- Have you ever visited the job site or location prior to the interview to see what kind of employees you would be working with? *(Many times you can get a good feel about the employer's expectations by observing what really goes on day-to-day.)*

2. Have students share their thoughts about these questions and others that can be posed concerning the rest of the job search process.
3. Announce that in the final lesson there will be a simulated job interview conducted using the sample questions developed by the students during Lesson 9-3.

Part 2 – Hands-on Computer Activity

4. In groups or individually , have the students prepare a checklist of 10 "Dos and Don'ts" to get ready for their interview. Ask them to perform a search on the Internet for 'Job Interview Tips'. As they compile their lists, be sure that they Include such requirements as appropriate dress, on-time arrival, and exhibition of good hygiene for the interview.
5. Conclude the activity with a round-table discussion of the results and record the best of the lists on the board for instructor's use in preparing for the next lesson.

Part 3 – Individual Activity

6. Before returning the final versions of the students' resumes, hand out the copies of the Employment applications to the students.
7. Provide time for each student to complete their application. Monitor their progress and provide assistance if necessary.

HOT Activities:

1. Return the final versions of the resumes to the students and instruct them to compare the information that they provided on the application with that on their resume. Canvas the students to share discrepancies that might have occurred or omissions in some vital content. Ask the class to consider the implications from the prospective job applicants perspective as well as from the perspective of the potential employer.

2. Distribute the original of the Employment Applications to the students to complete accurately and completely using their resumes as a reference.

Assessment methods:

- Comparison and feedback by instructor after review of students' completed practice applications and resumes.
- Observation of participation by students in discussions to prepare job interview simulation.

Instructor evaluation and comments for improvement:

Taking Another Look

LESSON 9-5: Practicing for the Real Thing *Approx. time: 1 class*

Lesson overview:

Students participate in a series of simulated job interviews. At the end of the class there will be an opportunity to reflect upon how they can improve their interview skills for the real one.

Students will demonstrate the ability to:

1. Dress appropriately for the simulated job interview. (ES-1)
2. Arrive on-time and prepared for the simulated interview. (ES-2)
3. Exhibit good hygiene. (ES-14)
4. Reflect on and learn from simulated interview experience. (F/SL)
5. Be courteous and professional when communicating with others. (F/D&BC)
6. Listen effectively. (ES-5)

Prerequisites: Lessons 9-1, 9-2, 9-3, and 9-4

Content required:

1) Interview questions developed by students in Lesson 9-3.
2) Checklist of "Dos and Don'ts" developed by class in Lesson 9-4.

Resources:

Books or articles identifying successful job interview techniques

Materials checklist:

- ✓ A set of five questions for each student in the class prepared by instructor to be used in the student's role-play interview.
- ✓ Handout of evaluation checklist for each student for the interview process based on list of "Dos and Don'ts" developed by the class or of the sample provided (*JMOD9-5-1*).
- ✓ A timer to keep the interviews moving.

Equipment checklist:

- ✓ Interview desk and chair

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Review the questions that the students developed in Lesson 9-3, organize for each student's interviewer to use. You may want to modify the questions to incorporate additional issues discussed in Lesson 9-4.

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2. Modify the sample Interview Evaluation Checklist (*JMOD9-5-1*) or prepare one from the list on the board in Lesson 9-4 that could be used by students to self-assess as well as by the instructor.
3. *Optional*: Make an assignment list ahead of time for the students of the roles of interviewees and the interviewers to avoid any potentially uncomfortableness in the pairings of students for the role play interviews.
4. Prepare one section of the classroom to look like an employment office.

Part 2 – Simulation Activity

5. Conduct the simulation by providing the student interviewer with the pre-prepared list of questions for the student interviewee.
6. During the interviews, instruct the other students to listen carefully and take notes regarding the effectiveness of the interviewing processes that they are watching.
7. Use the timer to end long-winded interviews!

HOT Activities:

1. After all of the interviews have been completed, conduct a follow-up discussion with the students. Have them share their notes and reactions to the different interviews that they observed.
2. Distribute the Interview Evaluation checklist to the students and have them analyze their performance in the interview process. Ask them to include how they might improve or change their responses to the interview questions. Finally, ask them to identify a question or topic that they would have liked to ask of the interviewer.

Assessment methods:

- Observation by instructor of student's effective participation in the role play simulation of the job interview.
- Instructor evaluation of participation in the discussion to discuss the results and reactions to the interview role plays by the students.
- Evaluation and feedback by the instructor of the students' interview against the checklist.
- Self-assessment by students of their interview performances.

Instructor evaluation and comments for improvement:

Interview Evaluation Checklist
Lesson 9-5

On a scale of 1 – 5, with 1 representing Not at All and 5 representing Always, evaluate the job interview process in the areas below.

The person being interviewed:	Rating
1. Listened carefully to each question -	____
2. Asked politely for clarification -	____
3. Offered positive information -	____
4. Answered directly to the point -	____
5. Responded to the question with only the necessary facts -	____
6. Focused attention on successes -	____
7. Stated facts truthfully -	____
8. Appeared prepared and confident -	____
9. Showed a sincere interest in position -	____
10. Arrived on time and dressed appropriately -	____
11. Looked at the interviewer while talking -	____
12. Did not blame or show a negative attitude about past employers or job experiences -	____
13. Considered thoughtfully the question before answering -	____
14. Did not volunteer more information than was needed -	____
15. Conveyed enthusiasm -	____

1. (*Prepared from CareerPerfect's "To avoid common interviewing mistakes "*)

Module 10:
Creating a Logo

Module 10 – Creating a Logo

Learner Outcomes:

Graphics Software

1. Demonstrate knowledge of available graphics software applications.
2. Apply basic principles of visual communication in transferring data into graphic form.
3. Create simple graphics documents using drawing and painting software programs.

Analysis

4. Gather data to identify, interpret, and evaluate requirements.
5. Analyze the process interactively to continuously improve the outcome.
6. Explain constraints and consider alternatives.

Design/Development

7. Apply the design and development process from beginning to end.
8. Evaluate and assess the effectiveness of the design and development process.

Self Learning

9. Identify a self-learning path and plan experiences to meet learning goals.
10. Explain various learning styles and understand one's own style.
11. Identify and evaluate new learning in the context of learning goals.

Prerequisites: Knowledge of basic computer functions and Windows

Total Class Time: Approximately 10 hours

Outside readings and other resources:

Multimedia, Making It Work, Tay Vaughan
The Visual Display of Quantitative Information, Envisioning Information, and *Visual Explanations* by Edward Tufte
Language of Vision, Gyorgy Kepes
Art and Visual Perception, Rudolf Arnheim
Interaction of Color, Josef Albers
Art and Illusion, E.H. Bombrich
Web sites for organizations, companies, and government agencies
Including JCC web sites

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Module 10 – Creating a Logo

Module overview:

When you see golden arches, do you begin to get hungry for french fries? Ever notice that the U.S. Post Office has pictures of eagles on many of its envelopes? Could you miss the big red circles that make up the sign for a Target store? Did you notice at the bottom of your screen on the taskbar that the Start button is preceded by what looks like a flying window with colored panes?

Each of these pictures that represents a product, group, or company is called a logo. Logos are very important. They help you tell the difference between your choices for products or services. For example, the makers of the golden arches figure that, if you see them above the small king's crown, you will eat with them instead of "having it your way". You may even being wearing a logo – on your clothes, on your shoes, or on your jewelry.

The picture that is used for a logo is also very important. Pictures must be easily recognized and have some type of theme associated with the product or service. The designers of the logo for AT&T (which stands for American Telephone and Telegraph) chose to use a globe rather than a map of the United States. This was due to the fact that they wanted their telephone service to be considered for the entire world rather than for one country.

Special programs, known as graphics software, allow you to create or modify pictures using the computer. In this module you will use graphics software to practice your own artistic talents and participate in a contest to create a great logo!

For your portfolio, you will also produce:

1. A document with clipart.
2. A document with an original drawing.
3. A document containing a graphic using advanced techniques.

Lesson Titles:

- 10-1 Starting Logo-Motion
- 10-2 Introduction to the Graphics Software
- 10-3 A Look at More Features
- 10-4 Trying Out Advanced Techniques
- 10-5 Contest Day

1st
Place

2nd
Place

3rd Place

Honorable Mention

BEST COPY AVAILABLE

Creating a Logo

LESSON 10-1: Starting Logo-Motion *Approx. time: 1 class*

Lesson overview:
To prepare themselves for the design project, students will have an opportunity to consider what a logo is and the impact it can have on others during this lesson. Guest appearances by an artist or by a computer graphics designer help the students formulate ideas for their logo. Students are introduced to the graphics applications available for their use.

Students will demonstrate the ability to:
1. Analyze and synthesize the information. (F/ANL)
2. Summarize, communicate and document information. (F/ANL)
3. Describe the reasons for developing a custom designed logo. (F/D&D)
4. Listen effectively to guest speaker presentation. (ES-5)
5. Describe and compare different styles of graphic representations. (T/GS)
6. Explain the main features and purposes of graphics software. (T/GS)
7. Ask questions to clarify applications and procedure. (ES-6)

Prerequisites: Knowledge of basic computer functions and Windows

Content Required:
1) Description of a logo and purpose:
    a) Examples
2) Explanation of design elements and principles of composition and layout
3) Popular graphics packages and their differences
    a) Bit map vs. vector

Resources:
Artist from the community or graphics designer at a local company
Business flyers, magazines, Yellow Pages, and web sites
Articles with logos printed on them (shoes, tee shirts, caps, key chains, etc.)
Computer Concepts, Parsons and Oja
Graphics packages or demos with pictures and manuals

Materials checklist:
- ✓ Handout of Module 10 Overview (*JMOD10-Ovr*) for each student
- ✓ Cut-outs of Contest Prize Ribbons posted in the classroom (*JMOD10-0-1* and *JMOD10-0-2*)
- ✓ Transparency and Step-by-Step handout (*JMOD10-1-1*) that has been customized for the class by the instructor
- ✓ Sample of IRCO Simulation handout (*JMOD10-1-2*)
- ✓ Step-by-Step handout (*JMOD 10-1-3*) for each student

Equipment checklist:

✓ Overhead and computer display projector

Teaching strategy:

Part 1 – Pre-Lesson Preparation for Instructor

1. Invite an artist or a computer graphics designer to speak to the class today. If you do not know anyone personally in the graphics design business, call several local design-related or Web development companies in your area for potential speakers.
    - ➢ Ask the artist to specifically address elements of design and principles of composition and layout. Refer to the handout (*JMOD10-1-1*), sections 4 and 5 for specific terms. Also request any type of handouts to explain the terminology which can be used in this class.
    - ➢ Ask the graphics designer to describe the type of work he or she does on the computer, which computer programs would be most helpful to know, and how he or she develops an idea. Also explain that bringing along a portfolio of his/her work would be very informative for the students.
2. Review the design elements and the principles of composition and layout provided on in sections 4 & 5 of the handout (*JMOD10-1-1*) based on the focus of the class. If you are unable to have a guest speaker address these concepts, you will need to modify this according to how much emphasis or content available.

Part 2 – Introductory Discussion

3. Distribute the Module 10 Overview handout and allow time for the students to read it. Provide any further information about the purpose of the module and answer any questions that the students might have.
4. To ensure that you have some visual aids, display the samples from the resource list so that the students can see many different kinds of logos especially those from JCC web sites as well as many different ways in which they can be displayed.
5. As students look at the samples, ask them to explain why they think the picture was chosen and how the picture was customized to deliver a theme associated with the organization's product or service.
6. Conclude the discussion by explaining that at the end of the module there will be a contest among the students for the best logo design.

IRCO Simulation-Optional

- Distribute the handout (*JMOD10-1-2*) containing the contest information for IRCO. Provide time for the students to read and discuss the request by Jordan.

Part 3 – Presentation by Guest Speaker

7. Introduce the guest speaker and explain to the students what topics will be addressed. Encourage the students to listen intently and even take notes if no handouts are available.
8. After the speaker finishes, allow some time, if available, for additional questions and answers.
9. After the speaker has left, have students prepare a Thank You note.

HOT Activities:

1. Distribute the Step-by-Step handout (*JMOD10-1-1*) and instruct the students to develop a definition of logo. Have students share their ideas as they come up with their own definition. As students continue to complete the handout, have them share their answers with the class and record on the transparency, if possible.
2. Distribute the Step-by-Step handout (*JMOD10-1-3)* After students have completed the exercises, conduct a class discussion to compare and contrast the differences in the 'looks' and structures of pictures that are produced by different graphics packages. Emphasize the concepts of bit maps and vector graphics as students share their reactions.

Assessment methods:

- Assessment by students of useful information provided by guest speakers
- Instructor evaluates completed handouts on logos, design elements, composition principles, and layout principles.
- Observation by instructor of students' participation in classroom discussions.
- Evaluation by instructor and students of completed exercises from handout *JMOD10-1-3*.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 10-1

1. What is a logo?

2. Draw as many examples of the logos associated with the following companies as you can:

Nike

BMW

Adidas

Apple Computers

Mercedes

Starbucks

Microsoft Windows

Honda

Nintendo

3. Identify five additional logos and draw an example of each below:

4. Describe how each logo uses the following Elements of Design:

Line
Shape
Value
Texture
Form
Positive-negative shape
Perspective
Color
Scale

5. Describe how each logo uses the following Principles of Design and Composition:

Balance
Unity
Continuity
Rhythm
Repetition
Variety
Focal Point
Leading the viewer's eye
Foreground/background
Contrast
Linear/atmospheric perspective
Pattern

Module 10 – Creating a Logo

IRCO Simulation:

Putting You in the Picture: As a new Production Assistant with International Recording Company (IRCO), you have an opportunity to participate in a variety of company activities. With branch offices in several cities in the US and overseas, as well as fewer than 100 employees, there is always a need for your help whether it's in Administration, Marketing, Recording, or any other of the many departments. IRCO's President, Jordan Ono, along with the talented management team of Leslie Thompson, the Vice President of Marketing; Darryl Hughes, the Administrative Assistant to the President; and Jo Santiago, the Production Manager, is always seeking ways to improve the company.

Jordan walked in today with a great idea: he's going to conduct a contest to redesign our company logo among all of the Production Assistants. It's his thought that the present company logo doesn't address our image of an emerging international company as well as the many services a recording company like ours can offer. There will be four awards given out – 1st Place, 2nd Place, 3rd Place, and Honorable Mention – and these top four designs will be submitted to the Board of Directors for their vote at the next Annual Company Meeting.

The deadline for submission of a design is just a few days away. Everyone is starting to do research and look for creative ideas to come up with unusual effects in the graphics programs we have available at IRCO. Keep in mind, not only is this a test of your creativity but also of how proficient you can become with graphics software in a short period of time.

IT NOTES with STEP-BY-STEP
Lesson 10-1

Two Types of Graphics

Bitmap graphics – code instructs the computer about every individual dot or pixel that is displayed on the screen of the monitor. Screen is like a grid with each cell (pixel) represented by one or more bits.

a) Bits required per pixel for different graphics
    i) Monochrome – 1 bit
    ii) Grayscale with 256 shade of gray – 8 bits
    iii) 16-color image – 4 bits
    iv) 256-color image – 8 bits
    v) 16.7 million colors (true-color) in a photographic-quality picture – 24 bits
b) File structures containing bitmap images
    i) BMP
    ii) PCX
    iii) TIF
    iv) JPG
    v) GIF
    vi) PNG
c) Popular software packages
    i) Microsoft Paint
    ii) PC Paintbrush
    iii) Adobe Photoshop
    iv) Micrographx Photomagic

Hands-on Computer Activity:

1. Start Microsoft's Paint program and open one of the following files in the Windows folder: Forest or Sandstone

2. Choose the View/Zoom/Large Size series of commands to see the pixels on the screen.

3. Choose File/Save/As from the menu and then open the drop down box to show the different file structures available.

4. Save the picture two times using different file structures and list the new file names and their sizes below:

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Vector graphics – code consists of set of instructions that recreates drawing with lines or shapes so that the actual image is never stored by the computer.

- a) Storage space depends on complexity of image
  - i) Lines
  - ii) Shapes
  - iii) Fills
- b) File structures containing vector images:
  - i) WMF
  - ii) DXF
  - iii) MGX
  - iv) CGM
- c) Popular software packages
  - i) CorelDRAW
  - ii) Micrographx Designer

Hands-on Computer Activity:

1. Start the word processing program.
2. Using the Draw feature, create a vector graphic for your document.
3. Locate additional images in the clip art section and include two in your document.
4. Save the document and list below its file name and size:

Creating a Logo

LESSON 10-2: Introduction to the Graphics Software *Approx. time: 1 class*

Lesson overview:

The contest rules for the logo are introduced in this lesson and the graphics software program to be used is introduced. Fundamentals of all graphics packages are also reviewed. After a demonstration of the basic features and functions in the graphics software program, students have an opportunity to construct a document using clipart.

Students will demonstrate the ability to:

1. Explain the main features and purposes of graphics software. (T/GS)
2. Develop design alternatives for a logo. (F/D&D)
3. Access and use information from manuals and computers. (ES-13)
4. Create graphics which integrate principles of communication and elements of visual design. (T/GS)
5. Develop, edit, save, and retrieve information. (F/GS, ES-4)
6. Import and export objects from and to other applications. (T/GS)
7. Apply effectively new knowledge or skill. (F/SL)

Prerequisites: Lesson 10-1

Content required:

1) Description of features of available graphics software:
2) Basic functions of graphics software:

Resources:

Software manual
Online Help
Any collections of clipart

Materials checklist:

- ✓ Handout of LOGO Contest Rules (*JMOD10-2-1*) for each student.
- ✓ Transparency and handout of Knowing the Basics (*JMOD10-2-2*) for each student
- ✓ Clipart files available for each student
- ✓ Copies of Graphics Recipe Template (*JMOD10-2-3*)
- ✓ Sample IRCO Simulation of Jo's Memo (*JMOD10-2-4*)

Equipment checklist:

- ✓ Computers with graphics software
- ✓ Printers with paper
- ✓ Overhead and computer display projectors

Teaching strategy:

NOTE TO INSTRUCTOR: Your classroom may be equipped with one or many graphics packages. Whatever the case, it is recommended that you attempt to expose every student to the widest number of functions/features possible and encourage them to try out most of them. Most of the students will enjoy the creative process.

One of the best ways to accomplish this feat in a short amount of time is to: 1) review the menu options and identify all of the features/functions in your graphics package; 2) assign or have students choose which ones they would like to learn first; 3) have each student demonstrate the technique/s to the other members of the class, who then try them out.

Part 1 – Pre-class Instructor Preparation

1. After identifying all of the features/functions in the graphics packages, categorize them based on difficulty - basic, intermediate, and advanced. For example, basic functions/features might be toolbar capabilities where as advanced might be 3-D modeling techniques. These categories will depend on the software you have available.
2. Make a list for distribution to the students and distribute the Graphics Recipe Template (*JMOD10-2-3*) on which the student can record their choices.
3. Develop a schedule for the demonstrations of the recipes by the students based on the difficulty. If there are more features/functions available than students, then assign multiple recipes but try to vary the difficulty levels.
4. If time is critical, go as far as to fill out the copies of the recipe templates with each of the features or functions identified for the student demonstrations. Have these ready to distribute to the students, as opposed to having them fill the sheets out after the assignments have been made.

Part 2 – Introductory Discussion

5. Introduce the lesson and ask the students to choose a logo that they would like to design (or re-design). Suggest that students consider a club or sports team at the center. Students can give some thought to this choice throughout the rest of the lesson before making a final decision.
6. Distribute the LOGO Contest Rules (*JMOD10-2-1*) and have students discuss the significance of the requirements:
   - Originality (Point out that whatever graphics software package you may use, it is still only the tool, not the talent.)
   - Size (Ask the students to determine the dimensions of a square based on this requirement and use it.)
   - Sizing (Ask the students to identify places where the logo would appear – for example, a banner or sign on the wall, a flyer, clothing, etc. – and to consider the proportions for each of these uses and how it could affect their overall design.)

- Colors (Assign or have the students pick two common colors which would be found in any of the graphics packages.)
- Characteristics (Have students discuss ways to depict the image of group or team and offer suggestions for design strategy.)

Part 3 – Hands-On Computer Demonstration

7. Distribute the Knowing the Basics handouts (*JMOD10-2-2*) while the students start a graphics software package.
8. Ask different students to address each of the descriptions with the screen displayed. Record the details on the overhead, if possible. Throughout the demonstration, emphasize that most graphics packages have many common basic functions.
   - Make sure that the students understand whether bitmap, vector, or both types of graphic are constructed.
   - Simple maneuvers such as clicking on the object to make it active with 'handles' allows you to move it or resize it.
   - Review the file management options – some packages require you to 'export' rather than 'save as' to convert to a different file structure.
   - Review the edit options – ask the students if it possible to copy an image in one graphics application and then paste it into another graphics application.
   - Toolbox – see if the students can identify the function by the picture on the toolbox; save in-depth explanations for the recipe demonstrations.
   - Review the compatible file structures and the available colors in the palette.
9. Keep a running list on the board of unfamiliar terms, if necessary. For example, define 'cropping' and demonstrate.
10. Finish the computer activity by allowing the students to explore the package further and ask questions about any unique or unusual features that they may have found.

HOT Activities:

1. Assign students the task of designing a simple page-size graphic document using clipart. Have students identify a list of possible topics for their documents based on 'reminder' messages that would be useful around the center. List these on the board from which students can choose.

IRCO Simulation-Optional

- Distribute the handout of Jo's Memo *(JMOD10-2-4)* as the topic for the clipart assignment.

2. Complete the assignments of functions/features to the students and distribute the corresponding labeled Graphics Recipe Templates on which to document the steps to accomplish the function/feature (JMOD10-2-3). Post the schedule of demonstrations so that the students may budget their time accordingly.

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3. Use the remainder of the class for students to begin learning the feature or function they will demonstrate during the next lessons.

Assessment Methods:

- Instructor observation of participation in discussion and demonstration of graphics software.
- Evaluation and feedback by instructor of one-page reminders using clip art that were developed by the students
- Observation by the instructor of students working to learn the recipes that they will demonstrate.

Instructor evaluation and comments for improvement:

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LOGO

Contest Rules

1. Each entry must be an original graphic produced by a software program.
2. The graphic must be submitted on a standard 8 ½ x 11-inch sheet of paper with the actual graphic filling no more than an area of 49 square inches.
3. The graphic must be designed in such a manner that reduction or enlargement will not distort the image.
4. Each graphic must use the two colors.
5. The characteristics of the image depicted by the graphic should be easily recognizable to a general audience.

Knowing the Basics
Lesson 10-2

Describe each of the following about your software program:

1. Type of graphics produced

2. Screen movement

3. File Menu options

4. Edit Menu options

5. Toolbox features

6. File structures

7. Available colors

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Graphics Recipe Template
Lesson 10-2

Name of Feature/Function: ______________________________

Software Program Used: ______________________________

Image Produced:

Step-by-Step Instructions:

1.

International Recording Company

TO: All Production Assistants

FROM: Jo Santiago, Production Manager

Someone has been responsible for leaving dirty dishes in the sink of our Employee Kitchen. Although, I'm sure it couldn't be anyone on my staff, I have been asked by Leslie to post signs reminding everyone who uses the kitchen to clean up afterwards.

Your assignment is to design a simple page-size reminder that can be posted to keep the kitchen clean and the dirty dishes picked up. Include some clipart to give it a visual impact!

Thanks and I expect it on my desk within the hour!

Creating a Logo

LESSON 10-3: A Look at More Features Approx. time: 1 class

Lesson overview:
Students continue to acquire new methods for using the graphics software and practice constructing an original drawing for their logo.

Students will demonstrate the ability to:
1. Use graphics tools and functions. (T/GS)
2. Work with and incorporate graphics from on-line resources. (T/GS, ES-13)
3. Present information and explain procedures to class members. (ES-7)
4. Incorporate one's learning into desirable outcomes. (F/SL)
5. Ask for clarification when further information is required. (ES-6)
6. Apply effectively new knowledge or skill. (F/SL)
7. Listen carefully to student presentations and follow instructions. (ES-4, ES-5)

Prerequisites: Lessons 10-1 and 10-2

Content required:
1) Software functions that include:
    a) Templates
    b) Wizards
    c) Modeling tools
2) Online sources for graphic materials (USE CAUTION HERE!)

Resources:
Software manual
Online Help
Any collections of clipart
Specific Web sites which have already checked for acceptable material

Materials checklist:
- ✓ Additional copies of Recipe templates (*JMOD10-2-3*) if needed

Equipment checklist:
- ✓ Computers with graphics software
- ✓ Printers with paper
- ✓ Computer display projector

Teaching strategy:
Part 1 – Pre-class Instructor Preparation
1. Determine how and who will participate in the judging of the LOGO contest during the last lesson of the module.

2. Depending on how you choose to judge the entries, especially if you want to have outsiders involved, make those arrangements now.

Part 2 – Introductory Discussion

3. Explain to the students that during the next two days they will be introduced to different techniques for their graphics package.
4. Identify useful web site that offer clip art, images, or tools that the students could use in the design of their logos.
5. Have students sketch a rough drawing of the logo that they intend to create using the graphics software. Make sure that all students have decided upon an image at this point in the lesson. (Be prepared to suggest examples.)

Part 3 – Hands-On Computer Activity

6. Provide time for students to complete their Graphics Recipes to demonstrate for the class.
7. Begin the demonstrations of the basic features and functions of the graphics software using the computer display. After each of the demonstrations, allow time for the students to practice what they have just seen and ask questions of the student demonstrator.

HOT Activities:

1. Assign the students the task of constructing an original computer drawing of their logo sketches and printing a copy to be turned in by the end of this lesson. Encourage them to incorporate as many of the just-learned features or functions in the design of their graphic. Also, explain that this is an opportunity to test the feasibility of some of their original ideas for a logo with their newly-acquired graphic skills.

Assessment Methods:

- Instructor's written evaluation of demonstration, with feedback for the students.
- Observation of students completing the drawing assignment.
- Assessment by instructor of use of graphic techniques in document produced of logo sketch.

Instructor evaluation and comments for improvement:

Creating a Logo

LESSON 10-4: Trying Out Advanced Techniques

Approx. time: 1 class

Lesson overview:
In this lesson, students continue their demonstrations of intermediate and advanced graphics techniques that will be utilized to enhance the graphic of their logo sketch, produced in the previous lesson.

Students will demonstrate the ability to:
1. Use graphics software to design and modify objects. (T/GS)
2. Use of intermediate and advanced graphics features. (T/GS)
3. Present information and explain procedures to class members. (ES-7)
4. Incorporate one's learning into desirable outcomes. (F/SL)
5. Ask for clarification when further information is required. (ES-6)
6. Apply effectively new knowledge or skill. (F/SL)
7. Listen carefully to student presentations and follow instructions. (ES-4, ES-5)
8. Stay on task until logo is completed. (ES-15)

Prerequisites: Lessons 10-1 through 10-3

Content required:
1) Explanation of intermediate and advanced graphics features
2) Editing techniques for object and attributes

Resources:
Software manual
Online Help
Any collections of clipart
Specific Web sites which have already been checked for acceptable material

Materials checklist:
- ✓ Additional copies of Recipe templates (*JMOD10-2-3*) if needed

Equipment checklist:
- ✓ Computers with graphics software
- ✓ Printers with paper
- ✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion
1. Explain to the students that during the lesson they will be introduced to intermediate and advanced level techniques for their graphics package.
2. Return the document containing the original drawing that was constructed in the previous lesson.

Part 2 – Hands-On Computer Activity

3. Provide time for students to prepare for the remaining demonstrations, if required.
4. Continue the student demonstrations of the intermediate and advanced features and functions of the graphics software, using the computer display projector. After each of the demonstrations, allow time for the students to practice what they have just seen and ask questions of the student demonstrator.
5. Conclude the demonstrations with a discussion summarizing the techniques that were presented. Ask students to make a written list of the top five features that they learned and to explain how they will use the features in the development of their logo.

HOT Activities:

1. Assign the students the task of enhancing the graphic image of their logo sketch. Encourage them to incorporate as many of the just-learned features or functions in the design of their new graphic. Explain that this is the final opportunity for them to practice different techniques before their entry in the logo contest is due.
2. Monitor the progress of the students as they complete the assignment or work on the logo entry. If students finish with the assignment and their entry early, have them help other students master some of the more difficult graphic functions and provide technical support if needed.

Assessment Methods:

- Students self-assess their ability to learn and demonstrate assigned functions or features.
- Instructor evaluation of demonstration, with feedback for the students.
- Observation of students completing the learning activities.
- Assessment by instructor of use of intermediate and advanced graphic techniques in document produced of enhanced logo design.

Instructor evaluation and comments for improvement:

420

Creating a Logo

LESSON 10-5: Contest Day *Approx. time: 1 class*

Lesson overview:

Today's the day that all of the logo entries are due. Participants in the contest will be asked to make a brief statement about their designs before they are entered into the judging process.

Students will demonstrate the ability to:

1. Evaluate the effectiveness of design/development tools and processes, and make recommendations for improvement. (F/D&D)
2. Evaluate effectiveness of the learning process against expectations. (F/SL)
3. Analyze and synthesize information and document the results. (F/ANL)
4. Evaluate work of others and offer constructive feedback. (F/ANL)

Prerequisites: Lessons 10-1 through 10-4

Content required:

1) Information on elements of design
2) Information on principles of composition and layout

Resources:

Sources used in Lesson 10-1

Materials checklist:

- ✓ Award Ribbon Graphics (*JMOD10-0-1* and *JMOD 10-0-2*) printed using a color printer or constructed out of other materials and displayed prominently
- ✓ Copies of Evaluation forms (*JMOD10-5-1*) for designated judges

Teaching strategy:

Instructor's Note: It may be necessary to provide more hands-on computer time for the students during the first part of this class before starting the judging activities. Check throughout the class to determine the status of their logos. If additional time is provided, recognize that there will always be some students who never want to finish their designs!

Part 1 – Introductory Discussion

1. Welcome and introduce the judges for the Contest to the students. If the judges are not familiar to the students, ask them to briefly describe their experience, background, and their interest in the contest. (You may easily use the class as their own judges for the contest if no outsiders are available. At the end of the presentations, students would vote on their favorite logo.)

Part 2 – Individual Assignment and Presentation

2. Explain to the students that as they submit their entry they must:
    - Give their entry a title and make a brief statement about what the logo represents and why this particular design was selected.
    - Identify themselves (for the judges to fill out the evaluation sheets).
    - Indicate which software program/s they used to construct their graphic.
3. After giving the students a few minutes to develop their statement, determine an order of submission and begin the process.
4. As each student submits his or her entry, display it for the judges and class to view.

HOT Activities:

1. While the judges are reviewing the entries, ask each student to prepare a written summary of what he/she learned during the graphics module. Have students identify what they liked most about the process, as opposed to what was least interesting. Instruct them to conclude their summary by recommending ways by which they could improve their design or graphics abilities.
2. After the judges have announced the four placements, conduct a classroom discussion to gather feedback from students. Ask them to comment on the criteria used for choosing the four entries and how well the criteria were addressed by each entry.
3. Conclude by having students speculate as to how the graphics skills that they learned could be used in different types of jobs or businesses.

Assessment Methods:

- Student self-assessment of ability to learn and demonstrate assigned functions or features.
- Instructor observation of participation in judging process, class discussion, and on-time submission of entry.
- Evaluation and written feedback from instructor based on judges' results for each of the entries.
- Display outside of classroom of entries chosen by judges.

Instructor evaluation and comments for improvement:

Logo Evaluation Form
Lesson 10-5

Logo Title ____________________

Developer ____________________

Software Used ____________________

	Possible	Actual
General Requirements (50 pts.):		
Original computer-generated graphic	10	______
Submitted on a standard 8 ½ x 11-inch sheet of paper	10	______
Addresses theme or subject effectively to achieve author's purpose	15	______
Characteristics of the image depicted by the graphic are easily recognizable to the intended audience	15	______
Uses of Elements of Design (35 pts.):		
Shape (actual graphic filling no more than an area of 40 square inches)	10	______
Color (use of the two colors)	10	______
Scale (reduction or enlargement will not distort the image)	10	______
Line Value Texture Form Positive-negative shape Perspective	5	______
Uses of Principles of Design and Composition (15 pts.):		
Balance Unity Continuity Rhythm Repetition Variety Focal Point Leading the viewer's eye Foreground/background Contrast Linear/atmospheric perspective Pattern	15	______
TOTAL SCORE:	100	☐

MODULE 11

Module 11: Taking It On-line

Module 11 – Taking It On-line

Learner Outcomes:

Analysis/Design/Development

1. Gather data to identify, interpret and evaluate the requirements.
2. Analyze the process interactively to continuously improve the outcome.
3. Apply the design and development process from beginning to end
4. Evaluate and assess the effectiveness of the design and development process.

Teamwork

5. Organize and work in a team setting.
6. Recognize expertise and learn from others; demonstrate collaborative decision-making.
7. Work and communicate effectively with persons of different backgrounds.

Project Management

8. Explain the basic phases of project management and use planning methods.
9. Coordinate the use of resources with other team members and groups.

Facilitation/Customer Service

10. Demonstrate personal qualities, attitudes and key skills that foster successful relationships with customers.

Internet/Graphics Software/E-mail

11. Create and maintain Web pages.
12. Use e-mail effectively and appropriately.
13. Use graphics to enhance the visual presentation.

Prerequisites: Modules 1, 2, 3, 4, and 10

Total Class Time: Approximately 20 hours

Outside readings and other resources:

- *Creating Killer Web Sites, Second Edition* by David Siegel
- *Information Architecture for the World Wide Web* by Louis Rosenfeld, Peter Morville
- *The Non-Designer's Web Book : An Easy Guide to Creating, Designing, and Posting Your Own Web Site* by Robin Williams, John Tollett
- *Web Page Design : A Different Multimedia* by Mary E. S. Morris
- *Web Pages That Suck : Learn Good Design by Looking at Bad Design* by Vincent Flanders, Michael Willis
- *Secrets of Successful Web Sites: Project Management on the World Wide Web* by David Siegel

Module 11 – Taking It On-line

Through many of these modules, you have had the opportunity to experience the use of the Internet, a giant network of computers from all over the world. Within the Internet is one of its most popular services called the World Wide Web. The Web provides links between files with text, graphics, and multimedia that creates a huge "web" of information. It is information that you have found when searching on the Internet.

There are several key features that make the Web so popular. Each file or document on the Web is based on text. These files are called Web pages and are the foundation of the Web. Web pages are easy to create, edit, and transmit. Add in flexibility. You can also include graphics or multimedia files in a Web page by creating a link to it. Plus you can also link the page to other Web pages. A collection of Web pages that are linked and entered through one page, called the home page, is known as a web site.

Web sites serve many different purposes and can be created for individuals or for businesses. Some sites are designed to provide you with serious and timely information while some sites are designed to be simply for fun. Other sites want you to participate in e-commerce, the business of buying, selling, exchanging, or auctioning products or services using the Internet. One thing is for certain, though, they all want your attention!

In this module you will see for yourself how easy web publishing really is. For your portfolio, you will produce:

1. A personal homepage
2. Project planning documents for web design
3. A web site with multiple links

Lesson Titles:

- 11-1 Creating a Basic Web Page
- 11-2 How Not To Re-Invent a Cool Web Site
- 11-3 Understanding the Project
- 11-4 What Does the Site Deliver?
- 11-5 Structuring the Information
- 11-6 Building Your Site - Text
- 11-7 Building Your Site - Links
- 11-8 Building Your Site - Multimedia
- 11-9 Assembling and Testing Your Site
- 11-10 Publishing and Maintaining Your Site

Taking It On-line

LESSON 11-1: Creating a Basic Web Page *Approx. time: 1 class*

Lesson overview:
Students will design a Web page of personal information with two links in this lesson and begin to develop ideas for a new web site.

Instructor's Note: The complete design of a Web page takes many hours; this is just a simple beginning using a template. Avoid the use of pictures, graphics, animated GIF files and other time-wasting features. Let students add these goodies later in the module.

Students will demonstrate the ability to:

1. Create a basic Web page. (T/INT)
2. Follow directions to complete assignment. (ES-4)
3. Communicate clearly and concisely to the appropriate audience. (F/D&BC)
4. Organize concept and ideas into a logical outline. (F/ANL)
5. Work with a team to peer edit. (F/D&BC, ES-10)

Prerequisites: Modules 1, 2, 3, 4, and 10

Content required:

1) Review of Internet concepts
2) Use of web page template

Resources:
Manuals for Web authoring software

Materials checklist:

- ✓ Claris HomePage, FrontPage, WORD7.0, or other web authoring software
- ✓ Handout of Module 11 Overview (*JMOD11-Ovr*) for each student
- ✓ Step-by-Step handout (*JMOD11-1-1)* for each student which may need to be customized
- ✓ Templates for a personal web page *(JMOD11-1-2)* for each student

Equipment checklist:

- ✓ Computers with internet access and printers with paper

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute to each student the Module Overview handout (*JMOD11-Ovr*) and highlight the objectives of the module. Allow time for students to read the handout and ask them to share their thoughts about web page design and development.

2. Review the major concepts about web pages covered in Modules 1, 3, and 4. List key terms on the board, such as home page, URL, search engine, browser, web site, etc. and ask students to provide definitions in their own words as well as examples.
3. Explain that the purpose of this lesson is to create a personal home page as practice before starting the development of a new web site. Remind students to be cautious when using their address, phone number, or other important personal information on-line because of the universality of the web.

Part 2 – Hands-On Computer Activity

4. Distribute the Step-by-Step handout (*JMOD11-1-1*) and the Template handout (*JMOD11-1-2*).
5. Instruct students to plan the content for their page before they start creating. If students completed Module 9, they could use their resume information for content. Or, students may want to spotlight a hobby, center activity, or personal issue for the content. Point out that the students will be responsible for including two links on their page to other web sites. Give them some examples for possible links, such as favorite sites, sites about their hobbies or sports interests, company sites, or sites about cities where they have lived.
6. Monitor their progress and offer help whenever possible. Allow enough time for all of the students to complete the basic design of the page and encourage them to try adding additional features during any remaining time.
7. Upon completion, instruct students to have a student partner proofread their page while they proof their partner's page and then make any final revisions.

HOT Activities:

1. After all of the students are finished with the steps of the exercise, conduct a 'show and tell' activity to let them share their creations with their classmates. Have students explain how they accomplished unique or unusual techniques that other students might be interested in trying themselves.
2. Ask students about the concept of an on-line resume – which is what they may have created. Find out whether they think this is a good method for them to use during their own job search. Conclude by discussing the pros and cons raised by the students' reactions.

Assessment Methods:

- Student participation in peer edit activity and assessment of proofreading.
- Observation by instructor of students' contributions to class discussions.
- Instructor review and evaluation for accuracy, correct grammar, aesthetics, and ease of readability as criteria for a superior personal Web page.
- Student review of each page and assessment of the pages they like best based on originality or attractiveness. Display of printed student and instructor choices.

Instructor evaluation and comments for improvement:

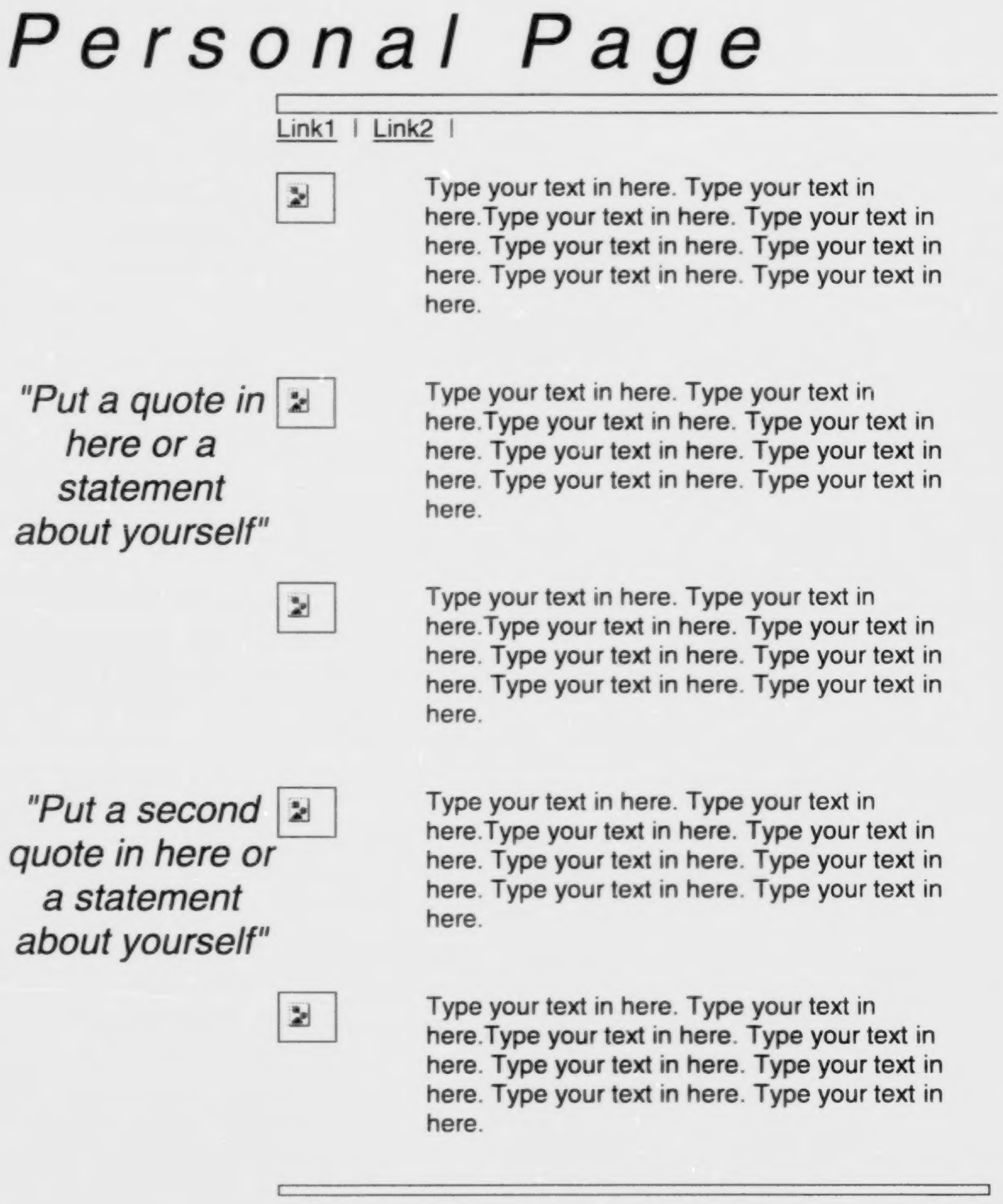
STEP-BY-STEP HANDOUT

Lesson 11-1

Using Claris *Home Page* {similar instructions will work for other web software}

1. Open **personal_page.htm** (it is a template inside the *Home Page* folder usually). This is an easy way to create a Web page.
2. Type in your full name into the personal page box at top.
3. Select all of the first box of text ("Type your text here") and delete it.
4. Enter in the first paragraph some information about yourself.
5. Repeat the procedure in each succeeding box by deleting the extra text and adding your own text describing your experience or accomplishments.
6. Save your work after typing each paragraph.
7. Find two quotes to put onto your page, select the quote text, and insert your own quote. (Don't forget to use Spell-check.)
8. Change the background by choosing the **Documents Options** button (eleventh from left). In the part titled *Appearance,* there is a *background* section and a *color* button. Click and hold right on the color, not the word. A color box appears. Select one and release.
9. Insert the title of your page by choosing **Document Options** again. Select **Parameters** and **Document** title. Put a title in the box.
10. Add **two** links to other internet sites using the following procedure:
    - From your browser, copy a URL from the address bar or anywhere else. That URL is now on the "clipboard."
    - Key in, on your web page, a word or phrase which identifies the link. Select the phrase.
    - Choose the "kinked arrow" button. It is the "link editor".
    - Paste the URL (from the clipboard) into the box URL.
    - Close the text link box or just hit Enter.
11. Save your work and print a copy for your portfolio.
12. To view in a browser, select the **Preview in Browser** button. Go back to *Home Page,* but do not close it as you will preview many times.

Templates for Web Page



Personal Page

Link1 | Link2 |

Type your text in here. Type your text in here.Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here.

"Put a quote in here or a statement about yourself"

Type your text in here. Type your text in here.Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here.

Type your text in here. Type your text in here.Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here.

"Put a second quote in here or a statement about yourself"

Type your text in here. Type your text in here.Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here.

Type your text in here. Type your text in here.Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here. Type your text in here.

Your Name

Address, City, State/Province, Zip/Postal Code
Phone Number
Email Address

Education

School Name
City, State/Province
Degree Earned, Year Graduated

Experience

Company Name
City, State/Province
Date Started - Date Ended
Job description. Type your text in here.
+ Responsibility: Type your text in here.
+ Responsibility: Type your text in here.
+ Responsibility: Type your text in here.

Company Name
City, State/Province
Date Started - Date Ended
Job description. Type your text in here.
+ Responsibility: Type your text in here.
+ Responsibility: Type your text in here.
+ Responsibility: Type your text in here.

Company Name
City, State/Province
Date Started - Date Ended
Job description. Type your text in here.
+ Responsibility: Type your text in here.
+ Responsibility: Type your text in here.

Volunteer Work/ Activities

Organization Name
City, State/Province
Date Started - Date Ended
Volunteer work description. Type your text in here.

Organizations

Organization Name, Year Joined
Organization Name, Year Joined
Organization Name, Year Joined
Organization Name, Year Joined

References

Reference One, Job Title, Company
Reference Two, Job Title, Company

LESSON 11-2: How Not to Re-Invent A Cool Web Site

Approx. time: 1 class

Lesson overview:
Before starting a new project, it is always useful to explore what is already out there -- thus not re-inventing the wheel each time. Students have an opportunity to look at a variety of web sites before they start preparing the design of their own site.

Students will demonstrate the ability to:
1. Use browser and search engines to find web sites. (T/INT)
2. Take initiative to find a variety of sites for review. (ES-8)
3. Analyze and synthesize information about different web sites. (F/ANL)
4. Analyze visual appeal and effectiveness of web page design. (F/D&D)
5. Identify what web customers need to feel welcome, to be understood, to feel comfortable, and to feel important. (F/F&CS, ES -9)

Prerequisites: Lesson 11-1

Content required:
1) General criteria for good web sites

Resources:
Discovering Computers 2000 by Shelly Cashman
Web sites such as www.WEBSITESTHATSUCK.com which provide examples of good and bad features of web sites. www.thunderlizard.com also has many free tips that are interesting.
Books and articles especially on web design
Professional web designers or digital artists available for interviews by the students

Materials checklist:
- ✓ Transparency and handout of Eight Features of a Good Web Site (*JMOD11-2-1*) for each student
- ✓ Three copies of the handout of the Web Site Evaluation Form (*JMOD11-2-2*) for each student

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:
Part 1 - Introduction
1. Explain to the students that the purpose of this lesson is to familiarize

themselves with the best and worst features of popular web sites. Hopefully, they will be able to incorporate this information into the design choices for their own web sites.

Part 2 - Class discussion

2. Distribute to the students the handout of the Eight Features of a Good Web Site (*JMOD11-2-1*). Using a transparency of the handout to record their ideas, ask the students to describe or give examples of each of the eight features on the list. For example:
    - Understandable - information is grouped in logical order and content is well organized,
    - Attractive - has visual appeal
    - Interesting and valuable - enjoyable, worth the surf to it
    - Consistent - unified in look and feel
    - Efficient - loads quickly
    - Skillful use of media elements - good balance, no visual clutter
    - Easily navigated - ability to find information from page to page
    - Feedback allowed - offers opportunity to learn from customers to site
3. Require that each student identify and review at least three different web sites. Have students determine the web sites in which they are interested and make a list on the board of site choices for each student. (Save this information for assessment of students at the end of the lesson.)

HOT Activities:

1. Distribute the Web Site Evaluation forms (*JMOD11-2-2*) to the students. Ask the students to consider carefully each of the web sites that they visit and to complete the evaluation forms thoroughly.
2. After all of the students have completed their evaluations, conduct a roundtable discussion and have the students describe their results. Solicit from the students additional features that they might have discovered for good web sites and add these features to the list on the first handout. Conclude the discussion by developing two top-ten lists of web sites, one for the best and one for the worst, that students can review during their project.

Assessment Methods:

- Review and feedback provided by instructor as to the quality and thoroughness of web evaluations conducted by each student for their assigned web sites.
- Observation by instructor of students' participation in class discussions on features and evaluation results.

Instructor evaluation and comments for improvement:

Eight Features of a Good Web Site
Lesson 11-2

1. Understandable

2. Attractive

3. Interesting and valuable

4. Consistent

5. Efficient

6. Skillful use of text, graphics, audio, video, and database

7. Easily navigated

8. Provides for feedback

434

Web Site Evaluation
Lesson 11-2

Name: ______________________________

Web site: __________________ Address: __________________

Features that I liked:

Features that I did not like:

435

LESSON 11-3: Understanding the Project

Approx. time: 1 class

Lesson overview:

This lesson focuses on defining the parameters of the project. Students receive information about project management and web design to help them develop a project plan.

Students will demonstrate the ability to:

1. Listen effectively and follow instructions. (ES-4, ES-5)
2. Clearly define and articulate the scope and goals of the project. (F/PM)
3. Ask relevant and interesting questions of guest speaker. (F/ANL)
4. Map resource requirements to resource availability. (F/PM)
5. Establish timeline for monitoring their project. (F/PM)
6. Work as a member of a team. (ES-10)

Prerequisites: Lessons 11-1 and 11-2

Content required:

1) Principles of project management
2) Steps in web site development

Resources:

Planning and Designing Effective Web Sites by Conger and Mason
Creating Web Pages for Dummies by Smith and Bebak
Fundamentals of Project Management by Lewis

Materials checklist:

- ✓ Transparency and handouts of Project Management Checklist (*JMOD11-3-1*) for each student
- ✓ Handout of Web Site Requirements (*JMOD11-3-2*) which may need to be modified

Equipment checklist:

- ✓ Overhead projector
- ✓ Computer projection system

Teaching strategy:

Part 1 - Before Class Instructor Preparation

1. Invite a web designer, on-line information specialist or other business professional with experience from a local company to speak to the class on the design and development of their web site. If possible, invite the individuals who were responsible for development of the center's logo/site.

Part 2 - Guest Speaker and Discussion

2. Prior to the speaker's arrival, conduct a question-developing session for the students. Encourage the students to ask the speaker questions about design considerations and choices.
3. Provide the projection of the web site for students to view as the speaker describes aspects of its creation and use.
4. After the presentation by the speaker, give the students an opportunity to ask their questions and discuss any design issues with the speaker.

Part 3 - Classroom Discussion and Group Activity

5. Organize the students into teams for their participation in the project.
6. Distribute the Project Management Checklist (*JMOD11-3-1*) and the Web Requirements (*JMOD11-3-2*) to all the members of each team.
7. Using the transparency of the handout as an outline, conduct a discussion to explain the planning of the project based on the steps for project management. Use the checklist to illustrate the tasks required throughout the entire project. Explain that the specific web design steps are a subset and will be introduced in the next lesson. Walk the students through the "Initiate" phase of the project.
8. Review the web site requirements and explain further if students need more information.
9. Instruct the teams to choose a topic for their site before beginning the next activity.

HOT Activities:

1. Have each team continue the discussion of managing the project and develop a written timeline that addresses the "Plan" phase - by listing the tasks and sub-tasks with time, materials, and team personnel budgeted based on available class time and class resources. Check with each group regularly as they complete the timeline to make sure they are on target with their project parameters.

Assessment Methods:

- Evaluation and feedback by instructor of timelines prepared by each team.
- Observation by the instructor of students' participation in the discussions with the guest speaker and the class.

Instructor evaluation and comments for improvement:

Project Management Checklist
Lesson 11-3

1. Initiate

☐ Recognize what needs to be done
☐ Decide what must be accomplished
☐ Define goals
☐ Select team
☐ Determine scope

2. Plan

☐ List tasks
☐ Identify sequence of task and sub-tasks
☐ Budget resources of time, materials, and personnel

3. Execute

☐ Conduct regular team meetings
☐ Resolve problems that arise

4. Monitor and Control

☐ Take corrective action
☐ Reschedule resources
☐ Adapt plan
☐ Change scope

5. Close

☐ Acknowledge results
☐ Learn from experience
☐ Review performances by team
☐ Write summary report

Web Site Requirements
Lesson 11-3

1. Choose from one of the following subjects for the web site:
   - A dormitory at the center.
   - A course or program offered at the center.
   - How-To (topic of your choice with instructor approval).
2. Include home page explaining web site.
3. Use minimum of three additional web pages.
4. Use minimum of five links; maximum of ten links.
5. Provide e-mail for site visitor.
6. Use minimum of two types of media (text, graphics, audio, video, etc.).
7. Fit all files on one floppy disk.

LESSON 11-4: What Does the Site Deliver? *Approx. time: 1 class*

Lesson overview:
Students begin to develop the design of their web sites by addressing the purpose of the site. Working in their teams, students brainstorm to gather contents for the home page and each of the additional web pages.

Students will demonstrate the ability to:

1. Identify the qualities that foster successful relationships with web customers. (F/F&CS, ES-9)
2. Identify tasks and determine sequence. (F/PM)
3. Work and communicate effectively with persons of different backgrounds. (F/TW, ES-11)
4. Perform the necessary steps in the design/development process. (F/D&D)
5. Gather information that is accurate and complete. (F/ANL)

Prerequisites: Lessons 11-1, 11-2, and 11-3

Content required:

1) Purposes of a web site
2) Procedures for idea generation

Resources:
Planning and Designing Effective Web Sites by Conger and Mason
Creating Web Pages for Dummies by Smith and Bebak
Fundamentals of Project Management by Lewis
On-line Help and examples provided with web design software

Materials checklist:

✓ Transparency and handout of Web Site Development Steps (*JMOD11-4-1*) for each student
✓ Handout of Web Site Content Outline (*JMOD11-4-2*) for each team

Equipment checklist:

✓ Computer projection system

Teaching strategy:

Part 1 - Introductory Discussion

1. Explain to the students that during the lesson they will consider the purpose of their web site and the reasons why visitors would be interested in their site. The goal of each team is to identify and document the contents for their site based on these considerations.
2. Distribute the handout of Web Site Development Steps (*JMOD11-4-1*). Using

the transparency as an outline, discuss the purposes of web sites. Ask students to share their ideas and record the list of purposes on the board. As students identify different purposes, organize their responses into major categories. For example, three major categories could be to:

- Inform.
- Entertain.
- Enable exchange (buy, sell, interact).

3. Have students share their experiences of visits to web sites and what types of content draw them to a particular site over another. If possible, use the computer projection system to display these sites as students describe their appeal.
4. Conclude by discussing what qualities customers would feel were important for a web site that was designed to inform, for a web site that was designed to entertain, and for a web site that was designed to enable exchange. Record the student responses beside the list of purposes on the board.

Part 2 - Team Brainstorming Activity

5. Distribute the handout titled Web Site Content Outline (*JMOD11-4-2*) to each team.
6. Instruct student teams to use a brainstorming technique to identify as many different areas of content for their sites. Suggest that they come up with as many different categories for information on their topics first and then analyze the information based on the purpose of their site. Once the categories of content have been determined, the teams should be able to organize the information in a logical format and check that it is accurate and complete.

HOT Activities:

1. Assign each team to review the information in previous lessons about the features of good web sites. Have each team member analyze the contents on their team's outline and discuss within their teams whether or not the outline reflects these qualities. Ask the students to revise the outlines if necessary before turning in to the instructor. Emphasize to the teams that they need to have completed the written outline for the contents and its review by the end of the class.

Assessment Methods:

- Participation in class discussions of purposes and customer appeal for web sites.
- Contribution to discussion of examples of web site examples by students.
- Evaluation and feedback by instructor of content outlines prepared by student teams.
- Observation of students working in teams to complete a well-written assignment on time.

Instructor evaluation and comments for improvement:

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Web Site Development Steps
Lesson 11-4

1. **Define purpose**
   - Conduct research
   - Generate ideas

2. **Determine structure**
   - Outline information
   - Organize content

3. **Analyze and design links**
   - Consider three different types:
     - On same page
     - Between pages
     - Between other sites

4. **Analyze and produce text components**
   - Develop mock-up in word processor

5. **Analyze and produce multimedia components**
   - Consider as enhancements in four categories:
     - Description
     - Decoration
     - Exploration
     - Demonstration

6. **Assemble and test**

7. **Publish and maintain**
   - Use feedback to continually update and improve

Web Site Content Outline
Lesson 11-4

Project Title:________________________________

Team Members:________________________________

1. Prepare a detailed outline for the contents of your web site below:

LESSON 11-5: Structuring the Information *Approx. time: 1 class*

Lesson overview:
Students use their content outline to structure the navigation of their web site and begin the actual production.

Students will demonstrate the ability to:
1. Begin the production of interactive web pages. (T/INT)
2. Design a web site that meets an end user's needs. (F/D&D, ES-9)
3. Be non-judgmental and open to all ideas from team members. (F/TW, ES-10)
4. Organize information and identify logical links between pieces of informations. (F/ANL)
5. Access and use information from manuals and computers. (ES-13)

Prerequisites: Lessons 11-1, 11-2, 11-3, and 11-4

Content required:
1) Organization of web pages
2) Introduction to web authoring software features

Resources:
Planning and Designing Effective Web Sites by Conger and Mason
Creating Web Pages for Dummies by Smith and Bebak
Web authoring manuals

Materials checklist:
- ✓ Web authoring software such as FrontPage, PageMill, or Claris HomePage
- ✓ Transparency and handout of Navigation Charting Form (*JMOD11-5-1*) for each team
- ✓ Step-by-Step handout (*JMOD11-5-2*) for all students that may need to be modified

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:

Part 1 - Introductory Discussion
1. Return the content outlines to the teams and explain that the purpose of today's lesson is to complete the navigation structure and begin using the web authoring software.
2. Have students organize in their teams and review their project plans and timeline. Provide time for the teams to discuss their progress and make any changes to their plans.

Part 2 - Group Activity

3. Distribute the Navigation Charting Form (*JMOD11-5-1*) to each team.
4. Explain to the students that the home page of their web site is like the front door -- it should welcome visitors and introduce them to what they will find there.
5. Instruct the team members to analyze the content on their outlines and decide which subjects belong on the main pages branching off the home page and which subjects belong on pages branching off the main pages.
6. Using the transparency of the form, demonstrate a sample hierarchy and label the home page, main pages, and other pages. Use an example such as a personal page about yourself. Main pages might be School, Social Life, and Hobbies. Under Social Life, there is a page for Friends, below that are two pages, Friends at Center and Friends at Home. Under Hobbies is one page for Playing Sports.
7. When the teams are finished with their form, ask that they turn it in to the instructor for review.

Part 3 - Hands-on Computer Activity

8. Distribute the Step-by-Step handout (*JMDO11-5-2*) to the students as their teams complete the navigation activity.
9. Provide time for the students to practice their use of the web authoring software and then begin the actual production of their sites.

HOT Activities:

1. Ask students to view one of the simple web pages that they have created with the HTML tags. Have students list up to ten tags that appear on their page and analyze what functions each might have. Instruct the students to write a brief description of what they think each of the tags means.
2. Conduct a discussion about the use of HTML tags and have each student share an example of one tag from his/her web page along with what he or she thinks it's definition is. Record these on the board and have the class agree or offer a better definition.
3. Have students review their project timelines based on their progress and revise any aspects to make sure the team completes their site on time.

Assessment Methods:

- Evaluation and feedback by instructor on navigation charts developed by teams.
- Assessment by teams of progress toward completing project.
- Observation by instructor of teams working effectively together.
- Participation in class discussion and assessment by instructor of student's list of HTML tags.
- Completion of Step-by-Step handout by all students verified by instructor.

Instructor evaluation and comments for improvement:

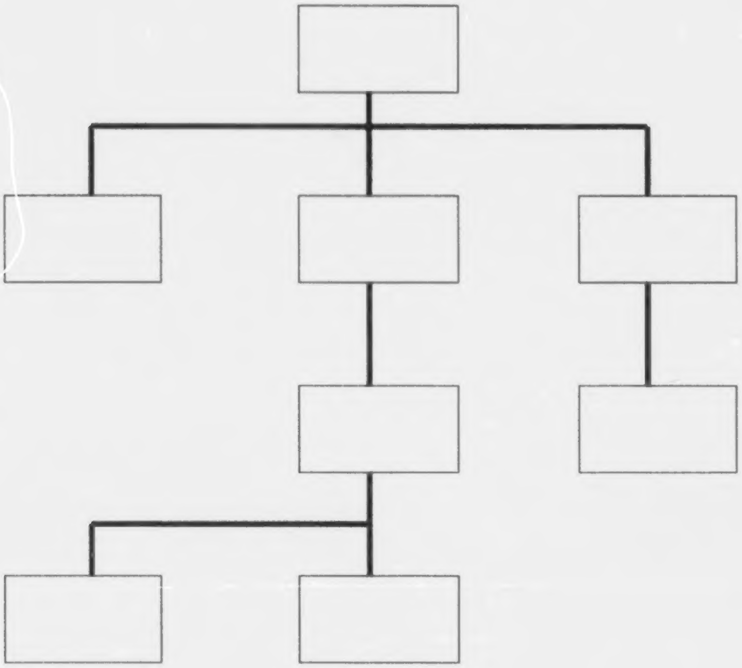
Navigation Charting Form
Lesson 11-5

Project Title:____

Team Members:____

1. On the back of this sheet, draw a simple sketch of how the main pages in your web site will be placed in relation to each other. Your drawing will look similar to an organizational chart with your home page at the top. Each of your web pages should be connected to the home page or other web pages on one or more levels below.

   Here is an example of how your navigation chart might look:



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STEP-BY-STEP HANDOUT
Lesson 11-5

1. Open your web authoring software to ***Page view***.

   Page view is your canvas for creating, designing, and editing the pages in your web. As you add text, pictures, and other elements to your pages, Page view displays them as they would appear in a Web browser. Page view is easy to use because it looks and works like a word processor.

2. Practice typing and formatting text.

   You create pages by typing and formatting text the same way you would create a document using a word processor. You can add text and pictures, change text size and color, and apply formatting such as centering a heading or making text italic. The web authoring software automatically creates the proper ***HTML tags*** for the document.

   Tags are special strings of text. **HyperText Markup Language** (**HTML**) specifies what each of the tags mean and its format.

   You can always see the HTML tags that are created by your web authoring software by simply clicking the HTML tab in Page view.

3. Practice enhancing page design.

   Apply one of the several graphical themes and color schemes that are included with your web authoring software. These themes give your pages a consistent and colorful appearance.

LESSON 11-6: Building Your Site - Text

Approx. time: 1 class

Lesson overview:
During the first part of production for the web site, student teams should focus on creating all of the text for each of their pages.

Students will demonstrate the ability to:

1. Continue production of interactive web pages. (T/INT)
2. Share information and explain procedures to another person. (ES-7)
3. Review project status and make adjustments to timeline. (F/PM)
4. Compare the created pages to the outline specifications. (F/D&D)
5. Stay on task while working with team members. (ES-10, ES-15)

Prerequisites: Lessons 11-1 through 11-5

Content required:

1) Review of procedures for web page formatting
2) Features available for web page layout and design

Resources:
Web authoring software manuals
Web site examples from previous lessons

Materials checklist:

- ✓ Handout of Page Layout and Design Features (*JMOD11-6-1*) for each students
- ✓ Web site that demonstrate examples of each of the features on the student handout

Equipment checklist:

- ✓ Computer projection system

Teaching strategy:

Part 1 - Introductory Discussion

1. Explain that the purpose of today's lesson is to produce the textual information that will be contained in the web site. Return the navigation charts to the teams and address any issues necessary to improve or revise the structures.
2. Review the procedures for simple page formatting that were introduced in the previous lesson.
3. Using the computer projection system, demonstrate these basic functions or ask several students to demonstrate them.

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Part 2 - Hands-on Computer Demonstration

4. Distribute the handout of Page Layout and Design Features (*JMOD11-6-1*) to each student.
5. Using the computer projection system, demonstrate an example of each of the features listed on the handout.
6. As each feature is demonstrated, ask a student to describe which software functions would be used to accomplish the feature. Depending on the web authoring software used, procedures may vary.
7. Encourage students to note which features they like and where they can find the required functions.
8. Provide time for student teams to continue working on their web sites, using this new information. Monitor their progress closely and provide assistance when necessary.

HOT Activities:

1. Before the class ends, have teams stop their production work and meet to discuss their progress. Ask students to analyze the allocation of resources which were planned on the team's timeline and to revise any aspects to make sure that the team completes their site in the allotted time. Also, have them compare the web site requirements in handout JMOD11-3-2 to the current site under production and verify that all requirements are still being met.

Assessment Methods:

- Observation by instructor of students working effectively in their teams.
- Evaluation of participation by students in classroom demonstrations of web design features and procedures.
- Student assessment of progress, use of time and resources, and develop solutions to time/resource problems.

Instructor evaluation and comments for improvement:

Page Layout and Design Features
Lesson 11-6

Listed below are some features that will help you design a web page in many different and creative ways:

Page Templates - create single pages that you can format and customize to your needs.

Lists - create bulleted lists, numbered lists, definition lists, and nested lists on your pages.

Tables - create customized rectangular grids made up of cells that can be used to organize information like a spreadsheet or timetable.

Forms - create a collection of fields on a page that can be used to solicit specific information from visitors and provide feedback about your web site.

Shared borders - create page regions containing common text or graphics that are consistently displayed on all the pages in a web.

Navigation bars - create groups of graphical or textual hyperlink buttons that appear on the main pages of a web site.

Themes - enhance the appearance of list bullets, fonts, navigation bars, horizontal lines, and page background to lend an attractive and consistent appearance to your site.

Color schemes - create and apply your own or change and customize the color scheme of the current web.

Cascading style sheets - make it easy for the web designer's formatting style to be applied seamlessly and consistently across all of the pages in the web.

Frames - divide a browser window into different areas, each of which can display a different page; however, not all web browsers can display frames and frame pages.

LESSON 11-7: Building Your Site - Links *Approx. time: 1 class*

Lesson overview:
As production continues on their web pages, students will focus on adding the necessary links to create the web site and to access information at other sites.

Students will demonstrate the ability to:
1. Continue development of web pages. (T/INT)
2. Use of hyperlinks to create web interactivity. (T/INT)
3. Incorporate use of e-mail in web page design to provide feedback from visitors to site. (T/EM, F/F&CS, ES-9)
4. Access and use information from computers and manuals. (ES-13)
5. Work effectively in team. (F/TW, ES-10)
6. Monitor project plans and solve problems. (F/PM, ES-12)

Prerequisites: Lessons 11-1 through 11-6

Content required:
1) Procedures for adding links to web pages

Resources:
Web authoring software manuals

Materials checklist:
- ✓ Copies of Navigation Charting forms for each team
- ✓ Step-by-Step handout (*JMOD11-7-1*) for each student

Equipment checklist:
- ✓ Computer projection system

Teaching strategy:

Part 1 - Introductory Discussion
1. Explain that the purpose of this lesson is to accomplish the linking of the web pages which matches the navigation chart prepared in an earlier lesson.
2. Review the different types of navigation and emphasize that it is important to make their sites easy to move around in. If it is awkward or cumbersome to move around in, visitors may abandon the sites and surf elsewhere.
3. Ask student teams to review their navigation charts and determine which links are necessary so that visitors can easily jump to the pages that they're interested in.
4. Remind students of the e-mail feature that must also be included to allow visitors to give feedback about the site. Discuss with the students the placement and kinds of feedback that students would expect to receive.

Part 2 - Hands-on Computer Activity

5. Distribute the Step-by-Step handout (*JMOD11-7-1*). Have the students read over the techniques and ask questions about the different procedures.
6. Provide time for the students to work in their teams to add hyperlinks to the web pages that they have created. Monitor the progress of the teams and offer assistance when needed.

HOT Activities:

1. Before the class ends, have teams stop their production work and meet to discuss their progress. Ask students to analyze the allocation of resources which were planned on the team's timeline and to revise any aspects to make sure that the team completes their site in the allotted time. Also, have them compare their web site requirements to the current site under production and verify that all requirements are still being met.
2. Conduct a short discussion for teams to share their progress, problems resolved, and possible issues to be resolved with the other teams.

Assessment Methods:

- Observation by instructor of students working effectively in teams.
- Review of progress by teams toward project goals. Students and instructor assess progress reports.
- Participation by students in class discussions and in helping other team members with web site development procedures.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 11-7

To create hyperlinks from text:

1. Type the text that will be the link and press enter.

2. Click and drag the mouse over the words you just typed to select them.

3. On the **Insert** menu, click **Hyperlink**.
   The Create Hyperlink dialog box will appear. Here you specify the target of the hyperlink your are creating.

4. In the **URL** box, type the address immediately after the **http://**.
   For example, an address might be **www.msn.com.**

5. On your keyboard, press the DOWN ARROW key to deselect the text.

To create hyperlinks to other pages:

1. On the toolbar, click the Folder List button to show the Folder List in Page view.

2. Double-click the file name of your home page to open it in Page view. Keep the Folder List visible while you create hyperlinks to the other pages in your web.

3. When the home page is displayed in Page view, press CTRL+END to place the cursor at the end of the home page.

4. Locate the file name of the page to be linked in the Folder List.

5. Click and hold the left mouse button over the small icon next to the file in the Folder List, move the mouse pointer to a location on the home page and then release the mouse button.

   The software inserts the page title of the file as the hyperlink text. The blue underlined text shows the presence of the hyperlink.

6. On your keyboard, press the DOWN ARROW key to deselect the hyperlink.

LESSON 11-8: Building Your Site - Multimedia *Approx. time: 1 class*

Lesson overview:

The last phase of production will be the focus of this lesson. Students will enhance their web sites with graphics and other multimedia elements depending on the available disk space.

Students will demonstrate the ability to:

1. Complete production of an interactive web site. (T/INT)
2. Explain the purpose of plug-ins. (T/INT)
3. Monitor progress of project and make adjustments to project plan. (F/PM)
4. Compare project with design requirement. (F/D&D, ES- 4)
5. Access and use information from computers and manuals. (ES-13)
6. Work effectively with team members. (F/TW, ES-11)

Prerequisites: Lessons 11-1 through 11-7

Content required:

1) Review of purpose for multimedia elements
2) Information on plug-ins

Resources:

Web sites for multimedia companies (See handout.)
Web sites or CDs have graphics collections
Web authoring software manuals

Materials checklist:

✓ Handout of IT Notes on Plug-ins (*JMOD11-8-1*) for each student

Equipment checklist:

✓ Computer projection system

Teaching strategy:

Part 1 - Introductory Discussion

1. Distribute the IT Notes on Plug-ins (*JMOD11-8-1*) to all of the students.
2. Explain to the students that the purpose of this lesson is to discuss the possibilities for enhancing their web sites with graphics and other multimedia elements, such as sound, animation, and video.
3. Remind the students of the space requirements for their web sites and have teams verify that one floppy disk can hold all of the site files. The remaining space on the disk represents how many or what size enhancements are possible for their site.
4. Discuss the use of plug-ins and, using the computer projection system,

display examples of web sites that use each of the different plug-ins on the handout. Ask students to give more examples of plug-ins that they may have encountered while surfing the Internet.

Part 2 - Hands-on Computer Activity

5. Provide production time for teams to add multimedia elements to their sites. Monitor their progress carefully and offer assistance when necessary.

HOT Activities:

1. Instruct teams to analyze each of the multimedia elements that they consider adding to their site and determine its function - describes, decorates, explores, or demonstrates. This will help them if they have to choose whether or not to include it should space become an issue. Encourage the students also to use features included in their web authoring software that enhance visual appeal should they run out of space for many multimedia elements.
2. Before the class ends, have teams stop their production work and meet to discuss their progress. Have students analyze their progress based on the team's timeline and revise any aspects to make sure that the team completes their site in the allotted time. Also, have them compare their web site requirements to the current site under production and verify that all requirements are still being met.

Assessment Methods:

- Observation by instructor of teams working to complete the web projects.
- Contribution by students to examples of plug-ins during classroom discussion.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 11-8

Plug-ins

From _Getting Started with Microsoft FrontPage_

Plug-ins are small software programs that extend the functionality of a larger application, such as a Web browser. A Web browser plug-in can add support for specific types of files that a Web browser would normally not recognize, including pictures, sounds, and animations.

Virtually all plug-ins are supported in Microsoft Internet Explorer 4.0 and later.

To insert a plug-in on a page:

1. Import the source components to your current web.
2. In Page view, insert a plug-in with the **Advanced** command on the **Insert** menu.
3. Click **Plug-In** to insert the plug-in you want.
4. In the **Plug-in Properties** dialog box, type in the name of the data source file that you want to insert, then type a brief error message that will be displayed in Web Browsers that do not have the appropriate plug-in installed. You can also customize optional layout parameters for the current plug-in.
5. When you're done configuring the plug-in, click **OK** and a placeholder icon is inserted on the page to indicate the presence of the plug-in. You can preview a plug-in on the **Preview** tab in Page view or by clicking **Preview in Browser** on the **File** menu.

The three most important plug-ins are:

RealAudio - provides real-time playback of audio files.
Check out www.realaudio.com

QuickTime - provides for video editing and playback of movies in many different formats; developed by Apple
Check out www.apple.com/quicktime

ShockWave/Flash - allows playback of presentations and experiences created by Macromedia products.
Check out www.macromedia.com

LESSON 11-9: Assembling and Testing Your Site

Approx. time: 1 class

Lesson overview:
Students use this class to complete and test their web sites.

Students will demonstrate the ability to:

1. Troubleshoot and solve problems. (ES-12)
2. Complete the development of an interactive web site. (T/INT)
3. Stay on task until web site is completed. (ES-15)
4. Assess the team process, personal contribution to the team process, and make recommendations to improve the team process. (F/TW)
5. Explain the importance of documentation in project design. (F/D&D)
6. Work effectively with team members. (F/TW, ES-10)
7. Compare project with design specifications. (F/D&D, ES-4)

Prerequisites: Lessons 11-1 through 11-8

Content required:

1) Procedures for testing and completing web site assembly

Resources:
Web authoring software manuals

Materials checklist:

- ✓ Handout of Web Site Assembly Checklist (*JMOD11-9-1)* for each student
- ✓ Floppy disk for each team

Teaching strategy:

Part 1 - Introductory Discussion

1. Begin the class by explaining that this is the last opportunity for the teams to complete the development of their web sites.
2. Inform the students that at the end of class each team must turn in its web site files on a floppy disk. Explain that these disks will be used during the next class to evaluate the sites.
3. Field any questions students might have about the evaluation procedure or completion of their sites.

Part 2 - Hands-on Computer Activity

4. Distribute the Web Site Assembly Checklist (*JMOD11-9-1*). Walk the students through each of the procedures. Ask the students to explain why they think each step is important.

5. Instruct the students to individually preview the team's site and test all of the navigation links. Ask each team member to document all of the changes that he or she feels are necessary.
6. Have the students return to their teams to complete the rest of the steps on the checklist.
7. After the team has completed all of the steps, instruct them to make a copy of their web site files on a floppy disk to turn in to the instructor.

HOT Activities:

1. Have each team member prepare a written paragraph evaluating his or her participation in the team process. Ask them to consider whether the team interaction increased or decreased the quality of the project. Have students recommend how the group process could have been improved, if possible.

Assessment Methods:

- Observation of students completing the web site in their teams.
- Verification that each team turns in a floppy disk containing their web site files by the end of the class.
- Review and feedback by instructor to student evaluations of group process and project success.

Instructor evaluation and comments for improvement:

JMOD11-9-1

Web Site Assembly Checklist
Lesson 11-9

- ☐ Preview your web in a Web browser.
- ☐ Test all of your navigation links.
- ☐ Organize the files in your web in folders.
- ☐ Generate a Site Summary report.
- ☐ Check your spelling.
- ☐ Edit or replace text.
- ☐ Complete all web tasks.

Taking It On-line

LESSON 11-10: Publishing and Maintaining Your Site *Approx. time: 1 class*

Lesson overview:
In this lesson web sites are evaluated by all of the class and a wrap-up is conducted to allow students an opportunity to share their good and bad experiences during the web site development process.

Students will demonstrate the ability to:

1. Compare web site with design requirements and make recommendations.(F/D&D)
2. Communicate and document information and the recommendations. (F/D&D)
3. Comprehend/interpret meaning when ideas are expressed from diverse cultural, ethnic or linguistic perspectives. (F/TW, ES-11)
4. Listen carefully and follow directions to complete evaluations. (ES-4, ES-5)
5. Respect different styles of communication and actively encourage contribution from all team members. (F/TW)

Prerequisites: Lessons 11-1 through 11-9

Content required:

1) Web sites developed by the student teams
2) Web site requirements from handout JMOD11-3-2 incorporated in evaluation

Materials checklist:

✓ Handouts of Web Site Evaluation Form (*JMOD11-10-1*)
  Enough copies for every student to evaluate all of web sites developed by the other teams
  Enough copies for the instructor to use to evaluate each of the sites
✓ Floppy disks containing web site files for each team

Teaching strategy:

Part 1 - Before Class Instructor Preparation

1. Using the floppy disks provided by the teams, create folders and copy the files for each web site from the disk to each of the students' computers or classroom server.
2. Save the disks for back up should a site not run properly.

Part 2 - Introductory Discussion

3. Explain to the students the process for conducting the evaluations of the web sites.
4. Distribute to the students copies of the Web Site Evaluation Form (JMOD11-10-1) for each web site that they will evaluate.

Part 3 - Individual Computer Activity

5. Provide time for the students to complete their evaluations on all of the web sites.
6. Monitor the computers and the web sites to be sure all are running as loaded.

HOT Activities:

1. Conduct a wrap-up discussion for students to share their experiences working with the teams and developing a web site. Ask the students to contribute to the discussion with their reactions as well as with their recommendations for improving the team process or the web publishing process. Have students consider the quality of their sites as compared to a site that they might have been capable of doing individually. Conclude by asking the students to identify the area of their greatest frustration and how they could have eliminated or reduced it throughout the process.

Assessment Methods:

- Review and feedback of completed student evaluations by instructor.
- Display of outstanding web sites for rest of center personnel to view.
- Observation of student contributions to the wrap-up discussions.
- Evaluation and feedback by instructor of web sites developed by student teams.

Instructor evaluation and comments for improvement:

Web Site Evaluation Form
Lesson 11-10

Web Site Title ____

Team Members ____

Date ____________________

Evaluator ____________________

RATE the project on the 10 characteristics below using the scale: 1 - not complete 3 - fair 5 – good. Then add up all scores and give a total overall rating. Fill this score in the blank at the end of the project. 50 points are possible.

Home Page Layout ________

Color Appeal ________

Consistent Overall Design ________

Appropriate Graphics ________

Understandable ________

Efficient; fits on 1 floppy ________

Originality ________

Provides for feedback ________

Customer Appeal ________

Overall Presentation ________

Total Points ☐

Comments: ____

____

What did you learn? ____

____

____

Module 12:
Making It With Multimedia

Module 12 – Making It With Multimedia

Learner Outcomes:

Documentation and Business Communication

1. Create and present accurate and effective communication (oral and written) tailored to the specific purpose and needs of the audience.

Project Management/Design/Development

2. Explain the basic phases of project management and use appropriate project management planning tools and methods.
3. Apply the design and development process from beginning to end (from the start to finished "deliverable")
4. Evaluate and assess the effectiveness of the design-and-development process.

Organization/Delivery of Presentations

5. Organize and deliver presentation material.
6. Assess the effectiveness of the presentation and make recommendations for process and content improvements.

Presentation Software/Graphics Software

7. Use the components of presentation software creatively and effectively.
8. Use presentation software functions proficiently.
9. Apply basic principles of visual communication in transferring data into graphics form.
10. Create graphics using drawing and paint software programs.

Prerequisites: Modules 1, 2, 8, 10, and 11

Total Class Time: 20 - 30 hours as determined by instructor

INSTRUCTOR'S NOTE: This module is project-oriented. Although specific lesson plans are provided, you may choose to disseminate all of the information and details for the project during the first few days and merely use the lesson plan timeframe as a series of progress checks.

Outside readings and other resources:

- *101 Essential Tips: Exploring Multimedia* by Chris Lewis (Editor)
- *Getting Started With Multimedia* by Calleen Coorough
- *The Business of Multimedia* by Nina Schuyler
- *An Interactive Guide to Multimedia* by John Villamil-Casanova and Louis Molina
- *Design for Multimedia Learning* by Tim Boyle
- Kiosks in malls and other public areas which use multimedia elements

Module 12 – Making It With Multimedia

Module overview:

Do you have a story to tell? A very effective way to tell a story is through a multimedia presentation. Although the ideas and information in your story are important, enhancing the story with graphics, sound, animation, or even video can add depth and beauty to your work. These elements also help to keep the audience engaged and interested until the end of the presentation.

In previous modules, you have gained experience in word processing, in presentation and web authoring software, and in the use of graphics and multimedia elements. In this module, you will use this experience and your project management skills to design and develop a multimedia presentation. You may choose your own topic, but the project requirements and production details will be provided by the class instructor.

At the end of the module, you will have an opportunity to share the story in your multimedia presentation with your class. As you consider different topics for your presentation, remember that if you choose one that you are very excited about, it may be easier to create a powerful presentation for your audience. And, you will enjoy the process more!

Lesson Titles:

- 12-1 Planning and Pre-production Activities
- 12-2 Developing the Detailed Design Document
- 12-3 Media Production
- 12-4 Assembling the Presentation
- 12-5 Testing and Post-production Activities
- 12-6 This Is It!

Making It With Multimedia

LESSON 12-1: Planning and Pre-production Activities *Approx. time: 2 classes*

Lesson overview:
During the first two classes of this module, the students will be introduced to the parameters of the multimedia project and complete the planning process.

Students will demonstrate the ability to:
1. Organize communication in a logical sequence. (F/O&D)
2. Follow directions. (ES-4)
3. Clearly define and articulate project scope and goals. (F/PM)
4. Ask for clarification when further information is required. (ES-6)
5. Explain project requirements. (F/PM)
6. Identify available technology and materials to support the presentation. (F/O&D)

Prerequisites: Modules 1, 2, 8, 10, and 11

Content required:
1) Review elements of a good presentation
2) Review of project management steps

Resources:
Samples of multimedia software programs with strong story-telling emphasis.
Multimedia development books or web sites such as www.Macromedia.com with tips for better presentations.

Materials checklist:
- ✓ Handout for each student of Module Overview (*JMOD12-Ovr*) for each student
- ✓ Transparency and handout of Project Requirements & Evaluation Criteria (*JMOD12-1-1*) for each student – may need to be modified by instructor
- ✓ Transparency and (Optional) handout of Elements of Good Presentations (*JMOD12-1-2*) for each student
- ✓ Transparency and (Optional) handout of Project Management Checklist (*JMOD12-1-3*) for each student

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion
1. Distribute the Module Overview handouts (*JMOD12-Ovr*) to the students and allow time for them to review the information.

2. Lead a discussion about the different ways that multimedia might improve the delivery of a story. Have students identify the ways that the information in the story might be adapted for an audience.
3. Review the Elements of Good Presentations (*JMOD12-1-2*) using the transparency on the overhead to guide the discussion. (Distribute the handouts if copied.) Ask a variety of students to give their own reactions to what they like and dislike about presentations that they have seen.

Part 2 – Group Discussion of Project Requirements

4. Distribute the handout of the Project Requirements and Evaluation Criteria (*JMOD12-1-1)* to the students. Explain that the final assessment for this project will be in three categories where the percentages are noted.
5. Walk through each of the requirements with the students and provide time for them to ask questions about the expectations for the project.
6. Have students fill in the project due date based on the class time available for this module.
7. Review the concepts of project management with the class as they relate to the new assignment. Use the transparency of the Project Management Checklist (*JMOD12-1-3*) to illustrate the sequence of work to be accomplished. For example, point out that the development of the Project Concept document represents the Initiate phase. Ask the students to identify additional tasks that would be included in the other phases.

HOT Activities:

1. Assign students the task of developing a written Project Concept that describes the purpose and theme of their multimedia presentation. Have students include in this document the software and hardware tools that they intend to use to accomplish the presentation.
2. After the Project Concept has been completed and signed off on by the instructor, have the students prepare a printed chart titled "Project Timeline" listing the start and end times for each of the production tasks required to develop the multimedia presentation they have described in the previous step. Students should be encouraged to use spreadsheet software for this activity.

Assessment Methods:

- Instructor assessment of participation by students in the classroom discussions.
- Review for completeness and feedback provided by instructor to students on Project Concept and Project Timelines.

Instructor evaluation and comments for improvement:

JMOD12-1-1

Project Requirements and Evaluation Criteria
Lesson 12-1

Project: Multimedia presentation containing a maximum of 25 slides

Topic: ______________________________

Documentation requirements (50%):

- Project Concept - a written description of the purpose and theme.
- Project Timeline – a chart listing the start and end times for each of the project tasks.
- Content Outline – a written outline of the information to be covered.
- Navigation Map – a diagram or flow chart of the screens to be presented
- Storyboard – a graphic representation of each screen with instructions for preparation.
- User's Script – a written narration of the content or text to be presented.

Production requirements (30%):

- Use of at least one example of each type of multimedia – graphics, sound, animation, and video.
- Maximum length of 3 minutes.

Overall design (20%):

- Use of graphics techniques.
- Use of presentation software techniques.
- Originality and creativity

Completion date: ____________________

Elements of Good Presentations
Lesson 12-1

A great presentation has these **elements**:

1. An opening that grabs the audience
2. Organization in a logical, easy-to-understand manner, including many examples, analogies, anecdotes and humor.
3. Transitions, phrases or special effect techniques that move the presentation along.
4. Short sentences.
5. Easy-to-understand words.
6. An outstanding closing that is summative and reflects the points made throughout the presentation.

There are **key questions** to answer before a presentation is organized.

1. Who will be your audience? What do you know about your audience: ages, knowledge about topic, etc.?
2. What should the audience know, think, or do after the presentation?
3. What is the goal or objective of your presentation?
4. How much time do you have to make the presentation?
5. How will your presentation be evaluated, and who will evaluate it?

Watch out for these **design crimes**!

1. Type that's too big and heavy for page graphics and too small and light for presentation.
2. Layout that's cluttered with graphics leaving no open space.
3. Background that's too dark or over decorated.
4. Color that's hard to read – no blue on black or very bright, vivid colors.
5. Multimedia that produces motion sickness.
6. Alignment that's not consistent.
7. Emphasis that's overwhelming or distracting to the audience.

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Project Management Checklist
Lesson 12-1

1. Initiate
- ☐ Recognize what needs to be done
- ☐ Decide what must be accomplished
- ☐ Define goals
- ☐ Determine scope

2. Plan
- ☐ List tasks
- ☐ Identify sequence of task and sub-tasks
- ☐ Budget resources of time and materials

3. Execute
- ☐ Complete tasks
- ☐ Resolve problems that arise

4. Monitor and Control
- ☐ Take corrective action
- ☐ Reschedule resources
- ☐ Adapt plan
- ☐ Change scope

5. Close
- ☐ Acknowledge results
- ☐ Learn from experience
- ☐ Review performance
- ☐ Write summary report

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LESSON 12-2: Developing the Detailed Design Document

Approx. time: 3 classes

Lesson overview:

Preparing the documentation that guides the production of the presentation is the most critical part in its success. Every detail must be designed, defined, and described before any production work on the computer begins. In most cases, the time that was wasted during a project happened because someone didn't follow the 'blueprint' and something had to be 'rebuilt'. This lesson emphasizes the preparation of the components of the Detailed Design Document before students are allowed to begin production.

Students will demonstrate the ability to:

1. Organize communication in a logical sequence. (F/O&D)
2. Take initiative and use resources creatively. (ES-8, F/PM)
3. Select a presentation method appropriate for the purpose of the content. (F/O&D)
4. Access and use information from manuals and computers. (ES-13)
5. Explain the importance of project documentation during the design/development process. (F/D&D)

Prerequisites: Lesson 12-1

Content required:

1) Review of contents for a Detailed Design Document

Resources:

Software application manuals
Catalogs for CD collections of graphics, sounds, video, and animation
Examples of Detailed Design Documents developed in Module 8

Materials checklist:

- ✓ Handout of IT Notes (*JMOD12-2-1*) for each student
- ✓ 25 copies of Storyboard form (*JMOD12-2-2)* for each student

Teaching strategy:

Part 1 – Introductory Discussion

1. Have the students review the Project Timelines that they developed and consider whether they are realistic for the project. In some cases, students may need to modify the magnitude of their designs to make them feasible for the project. Suggest that students save the original document so that they can compare the end product to what the original one looked like to see the amount of changes.

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2. Distribute the IT Notes and several copies of the Storyboard form (*JMOD12-2-1* and *JMOD12-2-2*) to each student and explain that the purpose of this lesson is to accomplish the preparation of the last four sections of their Detailed Design Documents. It may be necessary to review some of the specifics of the content items if students have not completed previous modules on developing a DDD.
3. To conclude the discussion, have students explain in their own words why this document would be important to them. Point out that this document is a crucial record of what is planned but also may be changed along the way to reflect what actually happened.

HOT Activities:

1. Provide time for students to complete the preparation of these sections of written documentation for the DDD. Monitor their progress along the way by checking off the completion of the Content Outline, Navigation Map, all of the Storyboards for the presentation, and the User's Script. Also, use these checkpoints as a means for reviewing the quality and completeness of the students' work. Exhibit good examples of work done by the students to encourage other students to incorporate some of the same ideas or methods.

Assessment Methods:

- Review by the instructor, with feedback provided, of each of the components of the written documentation by the students to ensure thoroughness, accuracy, and feasibility.
- Observation by instructor of individual student's productivity levels.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 12-2

Each document that you prepare becomes part of the **Detailed Design Document**. It is the DDD that is used throughout the production process to develop the multimedia presentation.

1. Develop the project concept:
    - Describes the multimedia project
    - Gives a clear understanding of the presentation's purpose
    - Explains the theme of the presentation

2. Prepare a timeline:
    - Lists tasks to complete project
    - Identifies start and end time of each task

3. Outline your content:
    - Major headings will be titles of slides
    - Subheadings will be bulleted items or information on slide

4. Develop a navigation map or flow chart:
    - Defines the branching of the project
    - Slides are linear; cards can be non-linear
    - Illustrates the choices the user will have on each screen

5. Develop the project storyboard:
    - Sketch of content for each slide or card
    - Provides way to clarify ideas in the project concept and outline
    - Determines production needed for pictures, text, sound, animation and video
    - Helps develop uniform color, backgrounds, graphic concepts

6. Prepare scripts for narration and text:
    - Shows how the content message is relayed to the audience
    - Supports the purpose and content of the project

JMOD12-2-2

Storyboard Template
Lesson 12-2

Name of slide:________________

Slide No.:________

Includes:
(Circle) Text Graphics Sound Animation Video

Additional instructions for each element:

____

____

____

____

____

____

____

Length of time (seconds) on screen: ________ File Size: ______________

Making It With Multimedia

LESSON 12-3: Media Production *Approx. time: 5 classes*

Lesson overview:
With the Detailed Design Documents as their guides, students begin the process of producing the media components of their multimedia presentation. (If students are working in groups, the storyboard sheets can be divided among the members in two different ways. Realistically, students would work on one kind or category of media production, such as all of the graphics. On the other hand, to give every student an opportunity to work in each media, the storyboards may be divided equally within each category among all the members of the group.)

Students will demonstrate the ability to:

1. Report progress to other members of team and develop solutions to problems. (F/PM, ES-12)
2. Monitor timeline and evaluate progress. (F/PM)
3. Access and use information from manuals and computers. (ES-13)
4. Create graphics which communicate the intended message and appeal to the target audience. (T/GS)
5. Stay on task. (ES-15)
6. Import animation and video into presentation software slides. (T/PRE)
7. Share information and explain procedures to other class members. (ES-7)

Prerequisites: Lessons 12-1 and 12-2

Resources:
Software application manuals for presentations and graphics
Clip media or other pre-prepared multimedia elements
Web sites with examples

Materials checklist:

✓ Detailed Design Documents (DDDs) completed by the students and reviewed by the instructor

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain to the students that during this lesson all of their media production work should be completed. Demonstrate how slides are to be prepared using the specifications detailed by the storyboard information contained in the detailed design documents.

Part 2 – Hands-on Computer Activity

2. Monitor the students carefully as they begin the production of their media elements. Offer assistance constantly.
3. At times throughout the production phase, encourage students to try different software programs if a variety of applications are available.
4. If time permits, have students demonstrate cool or unusual techniques they may have discovered using the graphics or presentation software. This way other students can incorporate the same techniques in their projects.
5. Remind the students to update any types of style changes or revisions to the storyboard forms if, during production, the details of the media elements are modified. The DDD must always reflect the exact presentation being developed.

HOT Activities:

1. Set up a daily routine that allows for the students to convene and review their work and progress together. This type of activity allows students to share in solutions of problems or dilemmas they may have encountered during the production time. It also helps students determine if their progress is adequate toward meeting the project deadline.

Assessment Methods:

- Observation and feedback provided by the instructor on production progress for each student.
- Observation by the instructor of students sharing software skills and procedures with other class members.
- Verification by instructor that detailed design documents are being used and updated by students as production continues.

Instructor evaluation and comments for improvement:

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LESSON 12-4: Assembling the Presentation *Approx. time: 2 classes*

Lesson overview:

Once all of the media elements for the presentation have been produced, it is time to assemble the presentation. The Navigation Map in the DDD should provide the layout and guide for the student.

Students will demonstrate the ability to:

1. Review the content and organize the presentation so that the material is complete, logically sequenced, and meets the project guidelines. (F/O&D)
2. Apply and edit slide templates or use master slide to create new slides and notes where necessary. (T/PRE)
3. Use the outline feature to move text and slides. (T/PRE)
4. Monitor timeline and evaluate progress. (F/PM)
5. Access and use information from computers and manuals. (ES-13)
6. Share information and explain procedures to other class members. (ES-7)

Prerequisites: Lessons 12-1, 12-2, and 12-3

Resources:

Software application manuals for presentation or authoring software

Materials checklist:

✓ Detailed Design Documents (DDDs) completed by the students

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of this lesson is to assemble the parts of the project in the proper sequence using the presentation or authoring software program, and to develop a script based on the final flow of the story line. The script may be used by the presenter either as a guide or as a handout for the instructor, or both, depending on the complexity of the information during the evaluation of the presentation at the end of the project.
2. Ask students who finish this phase early to share their expertise with (or team-teach) less skilled members of the class. Schedule, if possible, demonstrations periodically throughout the assembly process to enable all students to have an opportunity to improve their authoring skills.

Part 2 – Hands-on Computer Activity

3. Have students continue the production of the presentation until finished. Monitor the progress of the students carefully.

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HOT Activities:

1. Provide time on a regular basis for students to convene to check their progress in each development phase and share frustrations or successes.
2. Have the students analyze the finished product and develop a script for it. The script should outline and describe what is happening on each screen and provide any prompts that require interactivity. The script should also include any verbal information that needs to be spoken by the presenter. The script may be prepared using a word processor and an outline format or using a spreadsheet, with each row representing a slide. You may want the students to develop their own script format or prepare guidelines for them to follow in its preparation. (Note: Some software programs allow the user to make notes with the presentation.)

Assessment Methods:

- Observation by instructor of students' progress and feedback provided when required.
- Observation by instructor of student's use of available software tools and sharing of expertise with other class members.
- Review and feedback provided by instructor for each student's script.

Instructor evaluation and comments for improvement:

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LESSON 12-5: Testing and Post-production Activities *Approx. time: 2 classes*

Lesson overview:

With the assembly of the multimedia program completed, students now begin the verification process. The first step in this process is to check the validity of the script and determine that the presentation follows the information in the detailed design document. The second part of this lesson is the actual testing of the multimedia program. Students should simulate as closely as possible the conditions in the room during the presentation of their multimedia program. The last step in this process should be to compare the final product to the specifications outlined in the Project Requirements.

Students will demonstrate the ability to:

1. Compare project results to the design requirements. (F/D&D)
2. Prepare alternative plans or demonstrate the ability to improvise as required by unforeseeable circumstances during the presentation. (F/O&D)
3. Troubleshoot and solve problems. (ES-12)
4. Complete project based on timeline. (F/PM)
5. Participate in a peer edit of another presentation. (ES-10, F/O&D)

Prerequisites: Lessons 12-1, 12-2, 12-3, and 12-4

Content required:

1) Considerations for conducting flawless presentations

Resources:

Books or on-line articles on effective presentations

Materials checklist:

- ✓ Copy of presentation script for peer edit
- ✓ Handout for each student of the Presentation Schedule (*JMOD12-5-1*)
- ✓ DDDs prepared by each student

Teaching strategy:

Part 1 – Before Class Instructor Preparation

1. Make copies of the Presentation Schedule (*JMOD12-5-1*) and cut in half so that there is enough for every student who will be presenting.
2. Number each starting with #1. After numbering all of the schedules, shuffle the sheets so that they are not in order and turn them face down.

Part 2 – Introductory Discussion

3. At the beginning of the class, ask each student to choose a Presentation Schedule number from the stack of face-down sheets. Reassure them that

they are in random order. After every student has made their choice, have the students fill in the title of their presentation and their name on the form and turn in.

4. Post the order of presentations on the board from the handouts, saving the handouts as back-up documentation.
5. Explain that the purpose of this lesson is to test or validate the multimedia program and the information contained within it.
6. Ask the students to recommend ways that they would consider to be successful at verifying that the presentation works and is accurate. Guide the students through this discussion and list their suggestions on the board. At the end of the discussion, point out the three steps that must be included (check the script, test the program, and compare results to requirements) in the process.
7. Conclude the discussion by asking students to identify ways that they can be prepared for the scheduled presentation. Find out if students feel that order of presentation has any advantages and why. Pose a situation that could be described as a worst-case scenario, such as a total crash of the computer during the middle of their presentation. Field from the students different ways that they might react or handle the situation.

HOT Activities:

1. Have students choose a partner to conduct peer edits of their presentations. Instruct the pairs to use the copies of the scripts to review their partner's presentation. During the review process, have the partners write comments, suggestions, changes needed, etc. on the copies. Explain to the pairs to be as thorough and as critical as possible.
2. Instruct students to make the necessary adjustments or revisions to their presentations based on their partner's review. Remind them to also produce a revised script as well.
3. Conduct a 'Disaster Drill'. Have students prepare for possible presentation emergencies by preparing a backup copy of the presentation, by making transparencies available for their presentation, and, if the audience is small, by producing a number of handouts with their name and contact information.

Assessment Methods:

- Observation by instructor of participation during student discussions.
- Observation by instructor of students conscientiously completing peer reviews.
- Review and feedback from partner provided to student during peer edit.

Instructor evaluation and comments for improvement:

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Presentation Schedule

Project Title: ____________________________

Student's Name: ____________________________

Order # ____

Presentation Schedule

Project Title: ____________________________

Student's Name: ____________________________

Order # ____

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LESSON 12-6: This Is IT! *Approx. time: 1 class*

Lesson overview:
During this lesson, students present their multimedia stories to the class.

Students will demonstrate the ability to:
1. Demonstrate original presentation material to an audience. (F/O&D)
2. Listen effectively and follow directions to review presentations. (ES-4, ES-5)
3. Obtain and use feedback to assess the overall effectiveness of the presentation. (T/PRE)
4. Analyze the effectiveness of graphics in communication of the message, as well as the design of the presentation, and make recommendations for improvement. (T/GS)

Prerequisites:
Lessons 12-1 through 12-5

Materials checklist:
- ✓ DDDs on display for class
- ✓ Posted schedule of presenters or a typed agenda prepared by the instructor
- ✓ Students' completed multimedia presentations
- ✓ Handouts for each student of the Student Evaluation Form (*JMOD12-6-1*) . Note: There are ***two files,*** one a document file which records the evaluation for one presentation or a spreadsheet file that allows the students to rate all of the presentations on one page. Choose which one is most appropriate for your class.
- ✓ Copies of the Instructor Evaluation form (*JMOD12-6-2*) to be used for each student by the instructor

Equipment checklist:
- ✓ Computer projection equipment

Teaching strategy:

Part 1 – Preparatory Activities
1. Have students make all preparations necessary for the setup of their presentation equipment at the beginning of the class. If possible, have students use an icon on the desktop to launch the presentation already in slide mode which is much more professional.
2. Confirm with each student the order of his or her presentation.

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Part 2 – Conducting the Presentations

3. Distribute the Student Evaluation Forms (*JMOD12-6-1*) to all of the students. Allow the students to review the rating system and how to score each of their evaluations.
4. Using the posted agenda, allow each student to deliver his or her multimedia presentation to the class.
5. After each presentation, provide enough time for the students to complete their evaluations of the presentation.
6. Retrieve the student evaluations at the end of the presentations.

HOT Activities:

1. Ask the students to prepare a short, written evaluation of their own performance. Either written or orally, have the students share with the entire class what, if anything, they would do differently to improve the quality of the presentation, the method of delivery, or the manner in which it was designed. If major problems occurred during any of the presentations, ask these students if they had anticipated these situations and what they could have done to be more prepared.

Assessment Methods:

- Instructor and student assessment of each presentation with feedback provided to the student.
- Observation of class discussions and use of feedback from peers.
- Self-assessments conducted by each student.

Instructor evaluation and comments for improvement:

MOD20-6-1

Student Evaluation Form
Lesson 20-6

Project Title ______________________________

Group
Members ______________________________

Date ______________

Evaluator ______________

Rating: * Give a rating of the project, 1 - not complete 3 - fair 5 - good* on these 10 characteristics below. Then add up all scores and give a total overall rating. Fill this score in the blank at the end of the project. 50 points are possible.

Page Layout ________

Color Appeal ________

Overall Design ________

Appropriate Graphics ________

Easy to Understand ________

Creativity ________

Originality ________

Use of Features ________

Client Appeal ________

Overall Presentation ________

Total Points ☐

Comments: ______________________________

____

What did you learn? ______________________________

JMOD12-6-1

Student Evaluation Form
Lesson 12-6

Instructions: Rate each project in the categories listed below from 1 to 5, with 1 meaning "Poor" and 5 meaning "Great". Add up the scores and fill in the TOTAL for each project. 50 points is possible.

	Presentations																								
Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Layout																									
Color Appeal																									
Overall Design																									
Appropriate Graphics																									
Easy to Understand																									
Creativity																									
Originality																									
Use of Multimedia																									
Audience Appeal																									
Overall Presentation																									
TOTALS																									

Instructor Evaluation Form
Lesson 12-6

Project Title ____________________

Student Name ____________________

	Possible	Actual
Format (50 pts.):		
Completed project per Timeline	10	
Detailed Design Documents:		
Project Concept	5	
Storyboard	25	
Navigation Map	5	
User's Script	5	
Content (30 pts.):		
Multimedia elements included:		
Graphics	5	
Sound	5	
Animation	5	
Video	5	
Slides easily read and understood by audience	5	
Good color balance	5	
Overall Design (20 pts.):		
Use of graphics software	5	
Use of presentation software	5	
Originality and creativity	10	
TOTAL SCORE:	100	

Comments: ____________________

Module 13:
Understanding Computer Basics

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Module 13 – Understanding Computer Basics

Learner Outcomes:

Self Learning

1. Identify a self-learning path and plan experiences to meet learning goals.

Computer Trends in Business and Society

2. Explain significance of past and current events in computer technology.

Research/Documentation

3. Use traditional and non-traditional sources of information.
4. Analyze, organize, and present research material

PC Principles and Operations

5. Perform basic personal computer operations.

Team Work/Workplace Skills

6. Organize and work in a team setting.
7. Recognize expertise and learn from others.

Prerequisites:

None

Total Class Time: Approximately 10 hours

Outside readings and other resources:

Upgrading & Fixing PC's for Dummies, Andy Rathbone
Windows 95 for Dummies or *Windows 98 for Dummies*, Andy Rathbone
Windows 95 Simplified or *Windows 98 Simplified*, Ruth Maran
More Window 95 Simplified, Ruth Maran
The Mother of All Windows 98 Books, Woody Leonhard and Barry Simon
The Indispensable PC Hardware Book: Your Hardware Questions Answered,
Hans-Peter Messmer

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Module 13 – Understanding Computer Basics

Module overview:

Have you ever traveled to a foreign country where you did not speak the language? Have you ever tried to explain to the doctor or nurse where it hurts deep down inside of you but didn't know the exact words to describe it? Have you ever asked for directions in an unfamiliar town and could not understand the new directions because more unfamiliar streets were used? Or, have you ever tried to get an item fixed and just hoped that the repairperson knew what he or she was doing?

Believe it or not, many people have the same feelings when dealing with computers. Working with computers and understanding how computers work is like learning a whole new language. The better you understand the terminology, however, the easier it is to ask questions, to talk to others about their computers, and to learn more as computers constantly change.

Throughout this module you will be introduced to many computer terms to increase your understanding about them. You will produce for your portfolio:

1. A written comparison of different types of computers.
2. A shopping list of new computer products.
3. A written procedure for computer on/off operation.
4. A professional memo recommending a power protection system.
5. A diagram of a computer office layout.
6. An essay about five important events in the history of the computer.

Lesson Titles:

- 13-1 What is a Computer, Anyway?
- 13-2 Getting To Know Your PC
- 13-3 Caution: Before Turning On
- 13-4 Designing the Coolest Office
- 13-5 A Short History of the Computer

Understanding Computer Basics

LESSON 13-1: What is a Computer, Anyway? *Approx. time: 1 class*

Lesson overview:

One of the first steps in understanding Information Technology is to find out about the types of equipment that one can use. In this lesson, students are introduced to the basic concepts of computers and the computer system types, based on different characteristics.

Students will demonstrate the ability to:

1. Explain the differences between hardware and software. (T/PC)
2. Work effectively in teams and build on ideas from other team members. (F/TW, ES-10)
3. Show respect to and cooperation with diverse members of an organization. (F/TW, ES-11)
4. Conduct research; organize and analyze research information. (F/ANL, F/RES)

Prerequisites: None

Content required:

1) Definition of computer, hardware and software
2) Ways to categorize computers
3) Main categories of computer systems:
    a) Personal computers/Microcomputers
    b) Servers
    c) Minicomputers
    d) Mainframes
    e) Supercomputers

Resources:

Discovering Computers 2000 by Shelly,Cashman, & Waggoner
Computer Concepts by Parsons and Oja

Materials checklist:

- ✓ Handout of page 2 of Module Overview (*JMOD13-Ovr*) for each student
- ✓ Pictures or handouts of different types of computers (*JMOD13-1-1*) which can be modified or updated by the instructor
- ✓ IT Notes (*JMOD13-1-2*) provided as supplement if no textbook is available

Equipment checklist:

- ✓ Access to several different types of computers
- ✓ Overhead projector

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Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the Module Overview (*JMOD13-Ovr*) and give the students time to review it. Conduct a discussion of the goals of the module. Ask the students to identify ways that the items for their portfolios may be of use when seeking employment in a variety of different jobs or businesses.

Part 2 – Class Discussion

2. Ask the students to describe what they think a computer is. As students respond, write key words from their definitions on the board. Then ask the students to explain the difference between hardware and software. Record key words from these responses. Using students' key words, prepare a class definition of 'computer', 'hardware', and 'software' for the students to remember. If possible, include the concept of digitizing or changing information into numbers so that a computer can process it. The word *digital* and numbers for speed of processing and size of storage will appear again and again throughout the lessons.
3. Distribute the IT Notes (*JMOD13-1-2*) and allow time for them to review this information. Have students compare their definitions to the ones on the handout.
4. Explain that there are many different ways to categorize computers. Again, solicit student input for these ways. Refer the students to the list of computers on the handout for hints. As the students respond, build a chart on the board with headers such as Size, Storage, Speed, Processing Capabilities, Price, and any others that are important.
5. While displaying the transparency of different computer pictures (*JMOD13-1-1*), ask the students if they know any of the names of the different kinds of computers that could be placed in the categories on the board. Try to get them to think of as many as possible; but, for some of the more obscure ones, you may have to explain what they are and why you are including them on the chart. Provide time for students to complete their own copy of the chart.
6. Explain to the students that different people learn in different ways. Some students will understand information after reading about computers, whereas more students will understand after reading and then hearing the information. And even more students will remember all of this information after actually seeing examples of these computers. Ask the students to think for a moment about how they learn best and then explain that the next exercises are designed to reinforce what they have only read or heard so far.

HOT Activities:

1. Devise a Computer Scavenger Hunt for the purpose of reinforcing the number of different kinds of computers that exist. For example,
    - Identify all of the computers located in the building or throughout the center and assign teams of students a limited time and a specific area in which to search for all the different types of computers that they can find. Instruct each team to prepare a written report on the number and kinds of

computers found, along with an analysis as to which category each would belong in.

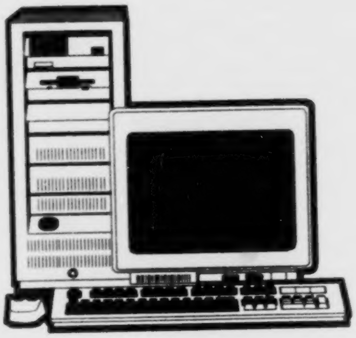
- ➢ Using the handout with the pictures of computers (*JMOD13-1-1*) or one which you have customized, have teams of students extensively research the features of each category or type within a category and report back to the class in an oral presentation the results of their findings.
- ➢ Instruct students to find as many pictures of computers as they can in newspapers, magazines, etc. for a 'show and tell' presentation. While each student is showing what they found, have the rest of the class analyzing in which category it would be included. The newspapers and magazines can be collected ahead of time by the instructor and given out prior to the assignment. Remind the students not to tear the pictures out of valuable magazines but to tag the pages.

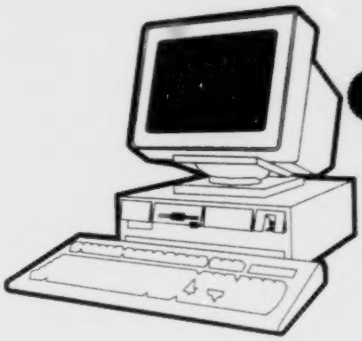
2. Since features and benefits of computing devices change regularly, ask students to prepare a written one-page report in which they compare and contrast two models of personal computers as to the usefulness that they might see in doing their class or personal work.

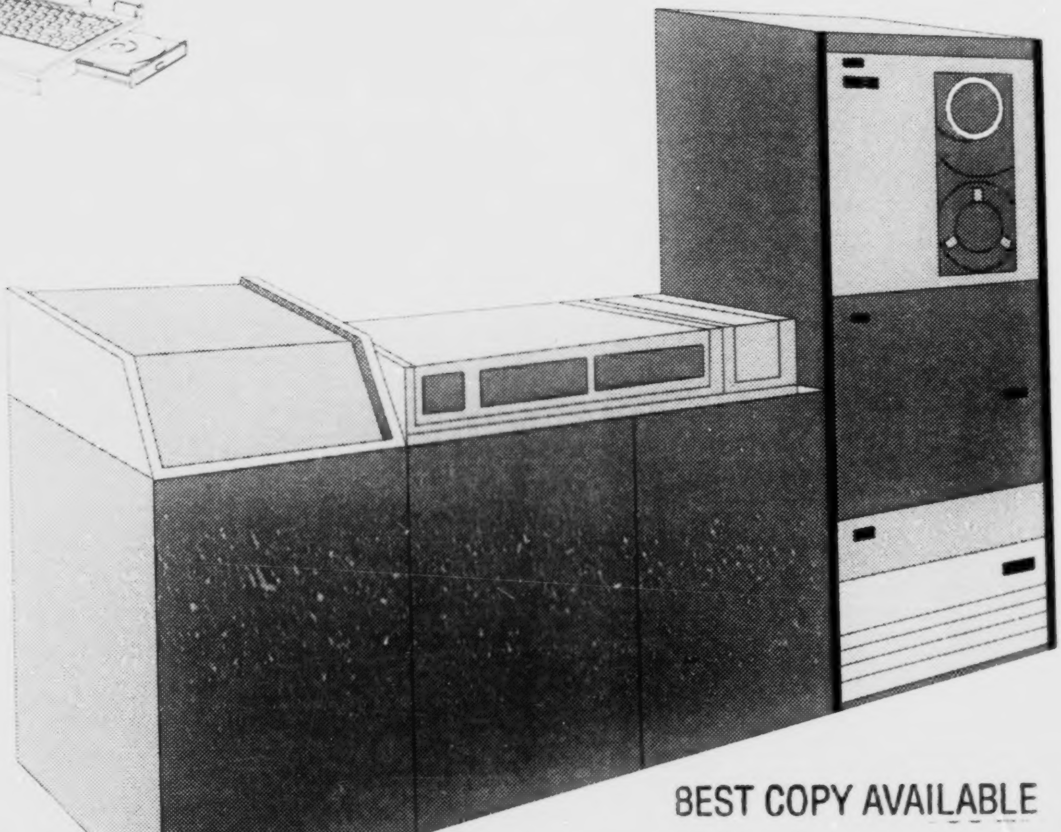
Assessment methods:

- Students compare the quantity and accuracy from each team's scavenger hunt results and provide feedback to the team.
- Students and instructor evaluate the oral presentations about the features of computers.
- Instructor observes and assesses quality of the 'show and tell' presentation.
- Individual students compare categorizations made during 'show and tell' presentations to correct responses.
- Written feedback from instructor of student-prepared reports comparing/contrasting usefulness of two different models of computers.
- Students and instructor assess ability to participate in class brainstorming, to respect others' ideas, and to contribute positively to the discussions.

Instructor evaluation and comments for improvement:







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IT NOTES
Lesson 13-1

1) Definition of computer - an electronic device, operating under the control of instructions stored in its own memory unit, that can accept data (input), process data arithmetically and logically, produce output from the processing, and store the results for future use:

    a) Hardware - all devices or equipment

    b) Software - computer program that gives detailed set of instructions to tell the computer exactly what to do

2) Different ways to categorize computers, for example:
    a) Size
    b) Storage
    c) Speed in MIPS (MIPS=1 million instructions per seconds)
    d) Processing capabilities
    e) Price

3) Main categories of computer systems

    a) Personal computers/Microcomputers
        i) Handheld - meter reading types
        ii) Palmtop - organizer
        iii) Notebook - carried in briefcase weighting about 4-8 lbs.
        iv) Laptop - larger, more features weighting about 8-15 lbs.
        v) Pen - PDAs
        vi) Desktop - sit on desk with separate monitor
        vii) Tower - upright case with more room
        viii) Workstations - high end usually connected to networks

    b) Servers - designed to support a computer network that allows user to share data, software, and peripherals

    c) Minicomputers - more powerful and expensive used by businesses for rapid performance of specific tasks

    d) Mainframes - large systems that handle hundreds of users, store large amounts of data and process at a very high rate

    e) Supercomputers - most powerful category and most expensive

Understanding Computer Basics

LESSON 13-2: Getting To Know Your PC *Approx. time: 1 class*

Lesson overview:

This lesson is designed to familiarize the students with the basic components and terms associated with Personal Computers.

Note to Instructor: Remember that, as in Driver's Education where every student is interested in driving but not always in becoming a mechanic, not every student who wants to know how the computer operates also wants to become a technician. Relating the components and functions to other day-to-day operations that all students can understand is very important.

Students will demonstrate the ability to:

1. Explain the principal PC components and their use. (T/PC)
2. Follow directions and communicate effectively. (F/WPS, ES-4, ES-5)
3. Organize research and present information. (F/RES)

Prerequisites: Lesson 13-1

Content required:

1) Main components of a Personal Computer:
    a) Input Devices - enter data
    b) System Unit - processes data
    c) Output - see results of processing
    d) Storage - permanently records data
2) Other peripherals
3) Communication devices
4) Networks

Resources:

Discovering Computers 2000 by Shelly, Cashman, & Waggoner
Computer Concepts by Parsons and Oja

Materials checklist:

- ✓ Transparency or handout of pictures of hardware (*JMOD13-2-1*) which can be modified for updated by instructor
- ✓ Handout of IT Notes (*JMOD13-2-2*) if textbooks are not available
- ✓ Four boxes, labeled INPUT, PROCESS, OUTPUT, and STORE
- ✓ Note cards, each labeled with one of the components which will be examined during the lesson
- ✓ Two colors of string

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Equipment checklist:

- ✓ At least one disassembled computer
- ✓ Selection of different examples of computer peripherals

Teaching strategy:

Part 1 – Pre-class Preparation

1. Gather the computer equipment to be displayed and examined by the students during the lesson. Any desktop computer that you can take the cover off the system unit is acceptable. The more different parts you can locate and display the better. This would include at least one of everything, if possible, on the list in the IT Notes (*JMOD13-2-2*). To make sure nothing valuable walks away, label and tape as many items as possible to a cardboard mount prior to class.
2. Depending on the location of your class and the retail stores available, contact the manager at a local computer retail store and make arrangements for either a guest speaker from the store or a field trip to the store with a store guide. This is an excellent way to hear about and/or see all of the latest and greatest technology of which you and the students may or may not be aware.

Part 2 – Introductory Discussion

3. Using the transparency or handout with sample hardware components (*JMOD13-2-1*) as a checklist along with the IT Notes (*JMOD13-2-2*), ask the students to help identify and explain the function of each of the computer components on display if they can.
   For example:
   - Input devices – keyboard, mouse, and microphone send instructions to the computer.
   - System unit – contains all of the electronics like the CPU to accomplish the processing of the instructions, the primary storage of information in memory, and the bays for secondary storage.
   - Output devices – monitor and printer provide the results of the instructions that the computer has been given or processed.
   - Secondary storage – floppy disk and a hard drive are just two of the ways of permanently recording information.

   Keep in mind that you may need to modify this list or add on to it based on the newest developments in technology. Stress to the students that this list will always be changing!
4. Continue the discussion by introducing the concept of digitizing – how a computer really processes information by translating it into numbers. Use the diagram provided in the handout (*JMOD13-2-1*) to explain a simple illustration of the CPU's task of digitizing into bits/bytes and to relate the system unit to a house with many rooms, all for different purposes.
5. During the rest of the discussion, emphasize what each of the components does as it relates to the four functions of the computer – input, process, output, and store.

6. Have one of the students explain what a peripheral is and then provide examples such as shown on the IT Notes (*JMOD13-2-2*).
7. Ask the students if they can identify additional storage devices not mentioned in the above description of computer components. (For many current computers, these would be considered required components.)
8. Conclude the discussion by having a student describe the concept of a network. Ask students to give examples of popular networks (ATMs, sales registers in a department store, the computer lab's computers, etc.)

HOT Activities:

1. Assign the students to visit a local computer store (if the field trip or guest speaker could not be arranged). During their visit, instruct them that they are to prepare a written shopping list by finding one new product example of each of the components studied during the lesson. The shopping list should include the brand name of the product and the price. NOTE: Many computer retailers provide the ability for you to "Build Your Own" computer by completing a series of questions at a kiosk provided in the store. Again, encourage students to put together a list of this type for the follow-up assignment in step 5.
2. If the students are not able to visit a computer store, have them gather computer catalog or advertisements in local newspapers or trade magazines to prepare their shopping list as described in step 1. Or, conduct a class activity using an on-line computer retailer to demonstrate how a computer can be customized for a potential sale based on the customer's specific request or requirements.
3. If the class visited a computer store or had a visit from the guest speaker, ask them to describe their experience, either written or orally, based on their previous understanding of how the computer works. Have them address to what extent their understanding has improved and to what degree their comfort level of being around the equipment has increased.
4. Using the four boxes and the note cards, conduct a game where the object is to 1) list the name of a component on a note card and 2) correctly place the component note card in the corresponding function box - Input, Process, Output, or Store (for example, five points for correct box). Increase the difficulty by requiring the students to explain how each individual component works (five more points). If the student gets all ten points for any component, then the bonus round of taking the colored strings, which represent the directions that the data can flow (to the processor or from the processor) and correctly connecting the component, is available for additional points. Challenge the students to identify even more components for note cards but remember that the system unit's components will not be able to use the string!
5. After explaining the bits/bytes of memory and the measurement standard of kilobytes and megabytes, have students practice computing a variety of different examples. If possible, refer to the scavenger hunt pictures in the previous lesson to use as a source for the examples.

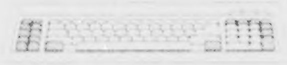
Assessment methods:

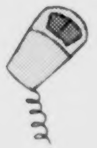
- Students share their shopping list with the class and have their choices evaluated by a panel of student experts.
- Instructor reviews and provides feedback of written description of computer operation.
- Individual assessment by scoring and instructor observation of student participation during components game.
- Instructor assesses ability for students to calculate correctly memory sizes.
- Students and instructor assess communication and organization during presentations.

Instructor evaluation and comments for improvement:

HARDWARE COMPONENT EXAMPLES
Lesson 13-2

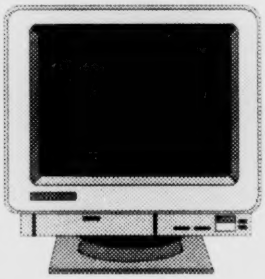
Input Devices:

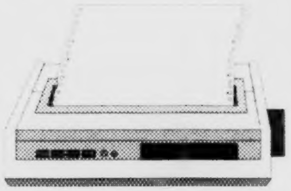




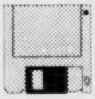
System Unit:

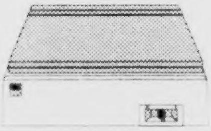
Output Devices:



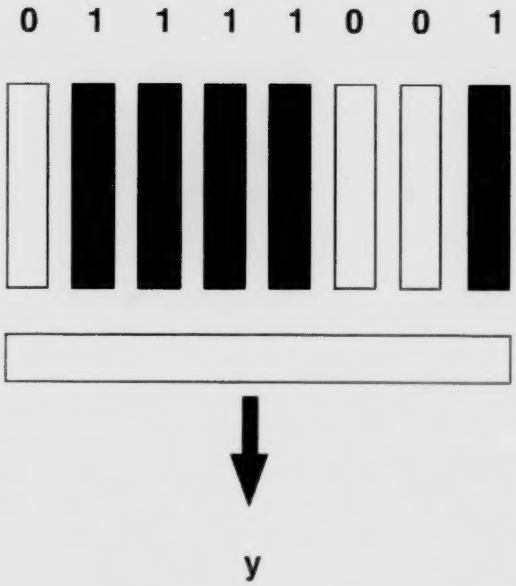


Storage:





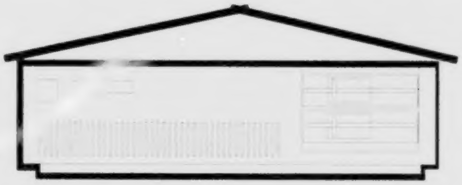
JMOD13-2-1



Eight BITS

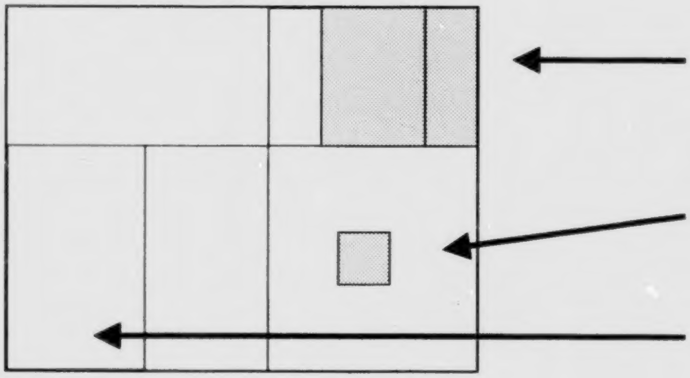
One BYTE

One CHARACTER



SYSTEM "House"

SYSTEM "Floor plan"



MEMORY "Room"

CPU "Room"

DRIVE BAYS or "Garage"

IT NOTES
Lesson 13-2

1) Main Personal Computer (PC) Components - Hardware:
   - a) Input Devices - *enter data*
     - i) Keyboard
     - ii) Mouse
   - b) System Unit - *processes and stores data*
     - i) Central processing unit (CPU)
     - ii) Motherboard
     - iii) Main memory
     - iv) Power supply
     - v) Drive bays for secondary storage
     - vi) IO cards
   - c) Output - *see results of processing*
     - i) Monitor/CRT (Cathode Ray Tube)
     - ii) Printer
     - iii) Sound card
   - d) Secondary storage - *permanently stores data*
     - i) Floppy drive
     - ii) Hard drive
     - iii) CD-ROM drive

2) Other peripherals - *more attachments, more capabilities:*
   - a) Input devices
     - i) Joystick
     - ii) Track Ball
     - iii) Microphone
     - iv) Scanner
   - b) Output devices
     - i) Speakers
     - ii) Projectors

3) Other storage devices
   - a) Tape back-ups
   - b) Zip drives

4) Cables, Ports, and Connectors – *link the components together*

5) Communication devices - *link computers together*
   - a) Modems
   - b) Network cards

6) Networks - *multiple computers linked together*

LESSON 13-3: Caution: Before Turning On *Approx. time: 1 class*

Lesson overview:
It's now time to address actually turning on the computer equipment after students have practiced assembling and verifying that everything was connected properly. This lesson will conclude with the development of a written procedure for turning on and off the computer components in a company's offices along with some general guidelines about proper use.

Students will demonstrate the ability to:
1. Disassemble and assemble basic computer components. (T/PC)
2. Turn on and off systems using the correct procedure. (T/PC, ES-16)
3. Work effectively in teams. (F/WPS)
4. Write technical procedures. (F/D&BC)
5. Read and effectively use technical documentation. (F/D&BC, ES-13)
6. Compose professional memos. (F/D&BC)
7. Analyze technical options and develop recommendations with supporting information. (F/ANL)

Prerequisites: Lessons 13-1 and 13-2

Content required:
1) Assembly instructions for:
    a) System Unit
    b) Monitor
    c) Printer
2) Power up procedures and sequence

Resources:
Articles on office or computer safety
Web sites of power supply manufacturers (Conduct a search for current brands or models at an on-line retailer such as www.Egghead.com.)

Materials checklist:
- ✓ Equipment manuals, Quick Start Guides, or Read Me First sections that include safety tips for the operation of any of the computer components so that each student has one as a reference tool
- ✓ Items that would produce static electricity, such as silk and glass, or dispenser of anti-static spray
- ✓ Several copies of the Warning (*JMOD13-3-1*) to post around computer lab

Equipment checklist:
- ✓ One or more disassembled computers

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Teaching strategy:
Part 1 – Preparatory Discussion

CAUTION: *For all of the assembly practice,* ***provide power strips that are NOT PLUGGED IN TO ELECTRICAL OUTLETS****. Depending on the configuration of your computer lab, it is suggested that you turn off power to all of the equipment today to prevent any mishaps.*

1. Using the disassembled computer as a demonstration model, ask the students to identify each part and describe its function.
2. Show the students how the cables and cords connect the components to each other and to the electrical source. Explain that if these are not plugged in correctly, the equipment will not work properly. If equipment manuals are available, refer to the pages where each of the connections is discussed.
   - System Unit's power cord
   - Monitor's power cord
   - Printer's power cord
   - Monitor cable to system unit
   - Printer cable to system unit
   - Keyboard cord
   - Mouse cord
3. Have the students examine the ends of each cable and cord. Then ask how they might figure out which cable/cord went where. They should be able to point out that by looking at the end of the cable or cord, you can find a receptacle or "port" that matches by noting the pins or type of prongs and matching them to the proper port. For example, between the monitor and the system unit, there is only one place on the back of the system unit where one can find a receptacle with enough holes for the monitor's cable. On some computers, all of the receptacles on the back are labeled.
4. Have students handle the cords/cables and ask for volunteers to demonstrate several times the cords/cables being removed and inserted into their proper ports.

Part 2 - Hands-on Activity

5. With the students working in pairs, have one student disassemble the computer into components and "scramble" (re-arrange) the cables and cords. Have the second student assemble the components. Repeat the activity, allowing the second student to disassemble and the first student to assemble.
6. Once all of the students have assembled the computer, direct the students' attention to the warnings that were posted around the lab.

   CAUTION: In case of emergencies, be sure that the plug in the electrical outlet is readily accessible to all persons. Remember, power is present in the computer equipment even if the ON/OFF buttons are off. To completely shut off power, you must disconnect the power cords from

the electrical outlet. Also, be sure to use the power cords with properly grounded outlets to avoid electric shock.

7. Go over each point and ask students to give reasons why it is important to be always mindful of these warnings. To further impress this information, ask students to relate any experiences in which they have accidentally been shocked by electricity and how they could have avoided it.
8. Demonstrate how static electricity can develop (especially in areas with low humidity) and have students give examples of static electricity that they may have seen or felt. Explain the importance of being grounded before touching the computer, especially anything inside, and show how this can be accomplished by first touching an unpainted metal surface such as the power supply to discharge any static that could damage the internal components.
9. Ask the students to identify other electrical issues that are not mentioned on the warning but should be considered. Encourage them to refer to the manuals or references provided to look for clues. Some examples should be:
   - Don't remove the system unit case unless unplugged from outlet.
   - Unplug before cleaning any of the equipment.
   - Avoid cleaning the electrical connections with liquid or aerosol cleaners.
   - Use power protection systems, such as surge protectors, surge suppressors, standby power supplies or non-interruptible power supplies.
   - Do not share an outlet with other large appliances.
10. Continue the discussion by asking the students to look through their manuals for any suggestions on powering up, such as sequence, i.e. which component should be turned on first. Again, gather suggestions or experiences from students as to why the order that components are turned on might makes a difference.
11. Address a procedure for turning off the equipment and any additional safety-related issues that may have come to light during the discussion. Explain the importance of turning off the computer properly using the Task Manager to end tasks as well as the Start/Shutdown function before the on/off switch is touched. If possible, also introduce the ScanDisk operations.
12. Conclude this part of the discussion by asking the students to identify other behaviors which would be unacceptable around the operation of a computer. For example:
    - Changing or modifying the computer in any way.
    - Vandalizing the equipment, removing mouse balls or changing the passwords.
    - Eating or drinking around the computer.
    - Horsing around or scuffling.
    - Not respecting the privacy or ownership of the equipment at any time.

HOT Activities:

1. Assign to the students, individually or in groups, the task of developing a list of the proper procedures for turning on and off all of the computer components in their class or in a company. This also should include some

general rules of use. Once the lists are developed, instruct the students to prepare a written version of the list that could be posted.

2. Instruct the students to research the variety of power protection systems available for computer equipment and write a memo recommending one for their classroom or a company's office. Remind the students that the memo should include reasons to support their recommendation such as superior performance, more features, price, warranty, etc.

Assessment Methods:

- Instructor observation of students participating and contributing to group discussions.
- Observation and assessment by instructor of students working in pairs for assembly activity.
- Evaluation of thoroughness and accuracy of student-prepared procedure lists with feedback from the instructor.
- Assessment by the students of the best procedure list. List or composite would then be posted in the computer lab for implementation.
- Recommendations of power protection systems reviewed by students and instructor based on quality/quantity of information gathered during research.
- Instructor evaluation and feedback of memo written by students recommending a power protection system.

Instructor evaluation and comments for improvement:

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CAUTION:

In case of emergencies, be sure that the plug in the electrical outlet is readily accessible to all persons.

Remember, power is present in the computer equipment even if the ON/OFF buttons are off.

To completely shut off power, you must disconnect the power cords from the electrical outlets.

Also, be sure to use the power cords with properly grounded outlets to avoid electric shock.

Be careful not to touch anything inside the computer unless you are grounded.

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LESSON 13-4: Designing the Coolest Office

Approx. time: 1 class

Lesson overview:

This lesson is based on arranging a new office at a company and setting up the computer equipment. The students will participate in several activities that review material from previous lessons.

Students will demonstrate the ability to:

1. Disassemble and assemble basic computer components. (T/PC)
2. Diagram, label, and describe the function of the PC components. (T/PC)
3. Work effectively in teams. (F/TW, ES-10)
4. Apply math to solve practical problems. (F/Math)

Prerequisites: Lessons 13-1 through 13-3

Content required:

1) Review of content in above lessons
   a) Basic computer components
2) Assembly instructions for
   a) System Unit
   b) Monitor
   c) Printer

Resources:

Articles on office design

Materials checklist:

- ✓ Equipment manuals for all of the computers so that each student has one as a reference tool
- ✓ Handouts for each student of Available Office Furniture (*JMOD13-4-1*)
- ✓ Handouts for each student of Office Layout (*JMOD13-4-2*)
- ✓ Measuring tapes and/or rulers

Equipment checklist:

- ✓ Computer for each student

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of the lesson is to review and apply some of the information that the students learned throughout this module as well as to design the layout for a new office at a company.

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Part 2 - Individual Activity (Computer Optional)

1. Distribute the two handouts to each student (*JMOD13-4-1* and *JMOD13-4-2*) and provide time for them to review each document.
2. Using the information on the two handouts, instruct students to prepare individually a diagram of an office layout. (Encourage the students to use programs like Paint if they want to design the office.) Emphasize that this diagram will be used by the office movers at a company to set up an office, so it is important that they measure exactly, and layout not only the furniture but also where the computer components will go. They are not required to use all of the furniture but should use good judgement to design a productive work environment. Their diagrams, however, must include all of the computer components listed on the handout with each labeled correctly.

HOT Activities:

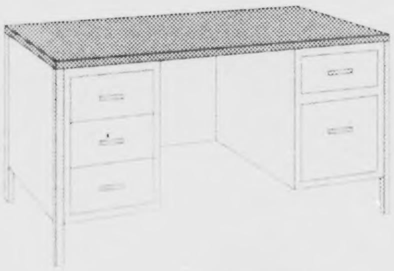
1. Remind the students that they didn't get the best furniture to put in the office layouts. Assign the task of evaluating the office design and researching better types of office furniture that would improve one's productivity. Students should then prepare a one-page written summary of their recommendations, with copies of sample pictures or of supporting articles being worth a bonus.
2. Since static electricity can be a problem in an office environment, discuss with the students suggested ways that this could be reduced (such as with anti-static floor mats, etc.).
3. Using Windows Accessory programs, have students calculate the square footage of the office, provide a printed inventory list of office equipment and furniture, and make a sign for the office door.

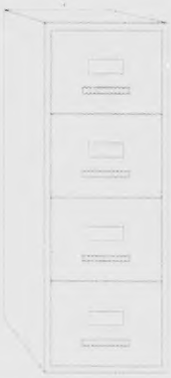
Assessment Methods:

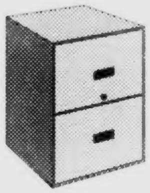
- Evaluation of office diagram by instructor and students.
- Instructor assessment of use of math skills by students to calculate proper space utilization.
- Review and feedback by instructor of office furniture recommendations.
- Self-evaluation by students of work conditions.
- Observation by instructor of students' use of Windows Accessories to accomplish tasks.

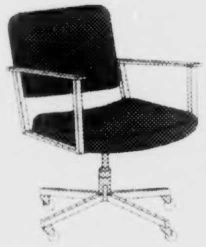
Instructor evaluation and comments for improvement:

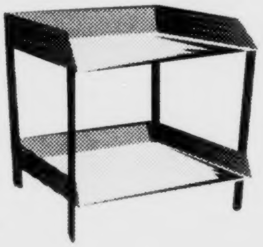
Available Office Furniture

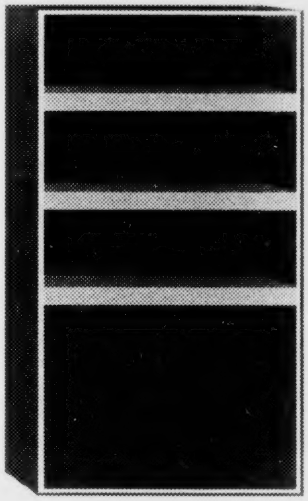


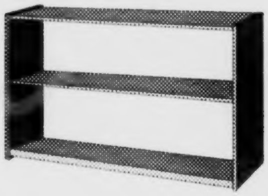












Furniture Specifications in inches

Desk: 30d x 60w x 29h
Chair: 25d x 30w
4-Drawer File Cabinet: 30d x 12w x 48h
2-Drawer File Cabinet: 30d x 12w x 24h

Printer Stand: 20d x 36w x 30h
Tall Bookcase: 12d x 48w x 72h
Short Bookcase: 12d x 48w x 36h

Office Layout

1 Square = 1 Foot

- **Layout your office space based on the following details and dimensions:**

  North and south walls are 12 feet in length.

  East and west walls are 15 feet in length.

  A set of windows centered on the south wall is 4 feet high and 6 feet wide. It starts about 3 feet up from the floor.

  The 3-foot door to enter the office is at the north end of the east wall and opens into the office towards the right.

  There are electrical outlets in the middle of each wall.

- **Draw where you would like to place your office furniture.**

- **Complete the layout by indicating on your drawing the exact placement for your computer components: System unit, Monitor, Printer, Keyboard, and Mouse plus one Power Strip.**

LESSON 13-5: A Short History of the Computer *Approx. time: 1 class*

Lesson overview:

Although computer technology seems to change on a daily basis, it still is advantageous for students to know about significant historical events. To complete this series of lessons, students will have an opportunity to "relive" some of these events.

Students will demonstrate the ability to:

1. Summarize five major milestones in the history of the computer. (T/CT)
2. Work effectively in teams and build on ideas from other team members. (F/TW, ES-10)
3. Show respect to and cooperation with other members of the organization. (F/WPS, ES-11)
4. Research and organize information. (F/RES, ES-6)

Prerequisites: Lessons 13-1 through 13-4

Content required:

Major Milestones in the history of the computers, for example:

1. First digital computer, the ABC, built in 1937
2. IBM introduces computers to business line and Grace Hooper develops a program, which becomes COBOL in 1952.
3. Chips are used to control circuitry in computers in 1964.
4. In 1976, first APPLE computer built by Steve Jobs and Steve Wozniak.
5. IBM introduces new personal computers using Microsoft's operating system in 1981.
6. In 1990, Microsoft releases Windows 3.0 and accelerates the growth of the multimedia PC market.
7. Intel releases the Pentium III chip and Microsoft introduces Office 2000 in 1999.

Resources:

Teachers Discovering Computers – A Link to the Future by Shelly, Cashman, & Gunter

NewMedia Magazine's History of Multimedia article

Materials checklist:

- ✓ Transparency or handout of IT Notes (*JMOD13-5-1*) if no text or other handouts are available
- ✓ Handout of Key Words (*JMOD13-5-2*) for each student
- ✓ Six pieces of 8 1/2 x 11 tag board and six black or colored marker pens

Teaching strategy:

Part 1 – Pre-Class Preparation

1. Unless you have access to the resources identified above, you will need to do a lot of outside preparation to gather any visual aids. The Internet, CDs or traditional encyclopedias offer the best of the other sources for milestones in the computer industry. Sometimes one can get lucky and find a current magazine article. Depending on which materials you are able to find will determine which of the following teaching strategies to use.

Part 2 - Introductory Discussion

2. While distributing the IT Notes (*JMOD13-5-1*) or a similar handout of the history of computers, ask the students what they think the first computer looked like. Then, write on the board: 30 tons, and 18,000 vacuum tubes, and a 30x50 foot space=1500 sq. feet or the size of one small classroom. If possible, display a picture of one of these large computers.
3. Now ask class to describe what today's computer is like. There are no wrong ideas, but allow enough discussion so that the class sees how far we have advanced since 1937.

HOT Activities:

1. Have the students divide up into six groups, with three to five members per group. Assign each group a time period of a decade starting with 1940. Explain that the group's task is to research the events during their decade that shaped the computer industry and present these events in the most memorable way for their other classmates. Suggest such methods as a song, multimedia presentation, skit, poem, time-line, etc. Remind the students that their research can include encyclopedias or other library books, magazines, or Internet resources.
2. Instruct each group to record the outstanding events from their decade on the tag board and, if no pictures were handed out, to illustrate each event with pictures or original drawings. Display each group's board upon completion and during their skit.
3. Conduct a discussion of the contents on each tag board after the group has presented their skit. Use the contents to emphasize the importance of what the students have portrayed in their skits.
4. Ask each student to pick what they think are the five most important events of all those presented and write an essay on why they chose these events and ranking them in order of importance.
5. Using the list of key words (*JMOD13-5-2*), assign one word to each student with the task of using this word in its correct context during a short conversation with every other student in the class. Provide an open discussion period that allows the students time to mingle freely and talk about computers until they have spoken with everyone in the class.
6. Conclude the lesson by asking each student to make one prediction about the future developments in computer technology. Record these ideas on a timeline and preserve for the duration of the entire class, if possible.

Assessment methods:

- Instructor assessment of the quality of the method chosen by the students to present the information researched about memorable events.
- Student assessment of the memorable moments recorded on the tag boards by the different teams.
- Evaluation and feedback provided by the instructor of event essays.
- Observation of student participation during key word discussion.
- Individual students assess their understanding of key words at the end of each conversation and continue talking if further clarification needed.
- Instructor and students assess quality and thoroughness of research and organization of information.

Instructor evaluation and comments for improvement:

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IT NOTES
Lesson 13-5

Major milestones in the history of computers and their impact on society

from in *Teachers Discovering Computers* by Shelly, Cashman, & Gunter

1. 1937 - ABC (Atanasoff-Berry-Computer), the first electronic **digital** computer, provided the foundation for the next advances in electronic digital computers.

2. 1943 - ENIAC (Electronic Numerical Integrator and Computer), the first large-scale electronic digital computer was completed. Weighed 30 TONS, contained 18,000 vacuum tubes, and occupied a 30x50 foot space.
3. 1945 - Dr John von Neumann wrote a report describing new **hardware** concepts and the use of stored programs. Became the basis for next digital computers built.

4. 1951 - UNIVAC 1 was introduced as the first commercially available electronic digital computer. Increased public awareness after providing analysis of presidential election results.
5. 1952 - IBM adds computers to its line of business equipment to become a dominant force in computer industry.
6. 1952 - Dr Grace Hopper, mathematician and commodore in the U.S. Navy describes how to **program** a computer with symbolic notation and was instrumental in developing COBOL, one of the most widely used **languages** in the world.
7. 1953 - Development of **core memory** provided larger storage capacities and greater reliability than vacuum tube memory.
8. 1957 - FORTRAN was introduced proving that an easy-to-use language could be developed.
9. 1958 - Computers built with **transistors** marks beginning of second generation of computer hardware
10. 1959 - More than 200 programming languages created.

11. 1964 - Third generation computers introduced with controlling circuitry stored on **chips**.
12. 1965 - BASIC programming developed, still widely used today. Digital Equipment Corporation (DEC) introduces first **minicomputer.**
13. 1967 - PASCAL, a structured programming language, developed.
14. 1969 - Intel develops a **microprocessor**, a microprogrammable computer chip. IBM unbundles and begins to sell **software** separately, allowing new industry to emerge.

15. 1970 - Fourth generation computers built with chips that use LSI (large scale integration) which contained 15,000 circuits as compared to 1,000.
16. 1975 - First commercially successful **microcomputer** (MITS Altair for $400) on market. ETHERNET developed by Xerox was the first local area network (LAN) allowing computers to communicate and share **data,** software, and **peripherals.**
17. 1976 - First APPLE computer built by Steve Jobs and Steve Wozniak.
18. 1979 - VisiCalc introduced; considered single most important reason why **personal computers** gained acceptance in the business world.

19. 1980 - IBM offered Microsoft the opportunity to develop the **operating system** for its new personal computers. Microsoft grows rapidly.
20. 1981 - IBM introduces the IBM PC and gains the largest share of the personal computer market; becomes the computer of choice by businesses.
21. 300,000 computers sold. By 1982, 3,275,000 sold.
22. 1983-Lotus 1-2-3 which combines **spreadsheet, graphics, and database** in one package is introduced.
23. 1984 - IBM AT with 80286 microprocessor introduced and Macintosh with unique **graphical interface** is introduced by Apple.
24. 1987 - Personal computers start using 80386 chip, meaning they can handle processing that previously only large systems could handle.
25. 1989- The Intel 486 chip becomes the world's first 1,000,000 transistor processor as it crammed 1.2 million on a sliver of **silicon** measuring .4"x.6" and executed instructions at 15 million instructions per second (MIPS), four times faster than a 386 chip.

26. 1990 - Microsoft releases Windows 3.0 which allows user to run multiple **applications**. Instant success, especially in **multimedia** applications.
27. 54 million computers in use.
28. 1992 - Apple introduces PDA (Personal Digital Assistant) called Newton MessagePad. 7 ½"x 4 ½" personal computer with pen **interface** and wireless communication.
29. 1993 - Pentium Chip introduced with 3.1 million transistors and 112 MIPS. Energy Star program started by EPA (Environmental Protection Agency) to encourage reduction in consumption of electrical power used.
30. 1995 - Pentium Pro chip with 5.5 m transistors and 250 MIPS introduced and Windows 95 released.
31. Two of every three employees have access to computers; one in three homes has computer. 250 million in use.
32. 1997 – DVD is introduced.
33. 1998 – E-commerce booms and Apple introduces the iMac.
34. 1999 – Intel releases the Pentium III chip and Microsoft introduces Office 2000.

Key Words
Lesson 13-5

1. Digital
2. Hardware
3. Vacuum tubes
4. Programs
5. Languages
6. Core Memory
7. Transistors
8. Chips
9. Minicomputer
10. Microprocessor
11. Software
12. Microcomputer
13. Network
14. Peripherals
15. PC – Personal Computers
16. Operating system
17. Multimedia
18. Spreadsheet
19. Graphics
20. Database
21. Graphical Interface
22. Silicon
23. MIPS
24. Applications
25. Interface

Module 14:
Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 2

Module 14 - Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

Learner Outcomes:

PC Principles/Hardware Installation/Configuration

1. Explain the individual parts that make up a stand-alone PC computer system and the relationships between the components.
2. Install and configure hardware in a PC computer system.
3. Explain PC hardware troubleshooting and maintenance.

Problem Solving and Troubleshooting

4. Identify and use a wide range of resources and techniques to address technical problems, develop solutions, and then implement resolution plans.
5. Identify and use appropriate communication tools and methods to correctly isolate and identify technical problems.

Team Work/Workplace Skills

6. Accept responsibility for one's own behavior and be aware of its impact on others.
7. Organize and work in a team setting.

Research/Analysis

8. Identify and use traditional and non-traditional sources of information.

Prerequisites: Module 13

Total Class Time: Approximately 20 hours

Outside readings and other resources:

Upgrading and Repairing PCs, Scott Mueller
PC for Dummies, Dan Gookin
How Computers Work: With Interactive Cd-Rom, Ron White
Computers Simplified, Ruth Maran

Module 14 - Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

Module overview:

In this module you will have an opportunity to find out even more about the inner components of computers.

One of the hardest parts about working with computers is staying current with the new features and capabilities that seem to be introduced everyday. As you study these lessons, it is important to recognize that information about computers is always changing. What you learn in this course may be "old" as soon as you finish the course. But, the key is learning how to learn about the new – how to read manuals for new products, where to look on the computer for vital information when fixing it, and understanding the basic functions and relationships between different components in the computer. It will be these skills that help you confidently tackle any problem with a computer, regardless of its age!

For your portfolio you will produce;

1. A chart on software application types and business uses.
2. A backup procedure for a personal computer.
3. Detailed diagrams of the system unit and of the motherboard in your computer.
4. A complete list of all your computer's components and peripherals with manufacturers, model numbers, and technical support phone numbers.
5. A document describing your system's boot process in depth.
6. A description of proper care and maintenance procedures to keep your computer healthy.

Lesson Titles:

- 14-1 Software Types and Their Many Uses
- 14-2 Be Safe – Back Up
- 14-3 Taking a Look Under the Hood
- 14-4 But Why a "Mother" Board?
- 14-5 Spec Check
- 14-6 Keeping Up With the Jones
- 14-7 These Boots Were Made For Talking
- 14-8 Is There a Doctor in the House?
- 14-9 Eliminating Installation Nightmares
- 14-10 Together Again

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Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 2

LESSON 14-1: Software Types and Their Many Uses *Approx. time: 1 class*

Lesson overview:

In this lesson students look at the different kinds of software that are available for computers. Although the students may be more familiar with the education and entertainment categories of software, this lesson also takes a look at the productivity category of software found in businesses as well as anti-virus software. Keep in mind that there are a number of other business specific software programs such as accounting, legal, medical and construction that are not included here but could be studied.

Students will demonstrate the ability to:

1. Present the purpose of different software applications. (T/PC)
2. Explain the difference between operating systems, programs, and files. (T/PC)
3. Describe how different software programs are used in businesses and for personal purposes. (T/CT)
4. Organize and work in teams. (F/WPS, ES-10)
5. Determine hardware requirements to support specific software. (T/PC)
6. Analyze and present information. (F/RES)

Prerequisites: Module 13

Content required:

1) Purposes and major types of computer software
    a) System software
    b) Application software
    c) Data files
2) Uses of computer systems in different parts of business organization
3) Anti-virus software

Resources:

Discovering Computers 2000 by Shelly, Cashman, & Waggoner
Computer Concepts by Parsons and Oja

Materials checklist:

- ✓ Transparency or handout of Module Overview (*JMOD14-Ovr*)
- ✓ Transparency or handout of IT Notes (*JMOD14-1-1*)
- ✓ Application Types/Business Uses Chart (*JMOD14-1-2*)
- ✓ Computer flyers (look especially in the Sunday newspaper or catalogs from retail stores (Office Depot) and mail-order companies which list software packages or use Egghead.com or Amazon.com for new software programs

Equipment checklist:

✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the Module Overview (*JMOD14-Ovr*) to the students and explain that this module continues to explore the inner workings of the computer. As a review, ask the students to develop a definition for software and to describe its importance to how a computer works.

Part 2 - Class Demonstration and Discussion

2. Distribute the IT Notes (*JMOD14-1-1*). Provide some time for the students to look over the new information.
3. Explain to the students the difference between system and application software. Ask the students to give examples of each type of software program if they can (DOS, Windows, Word, WordPerfect, Excel, etc.). If not, provide some examples to which they should be able to relate. If possible, demonstrate actual examples of the different programs.
4. Describe the four major groups of application software: 1) Productivity, 2) Educational, 3) Entertainment, and 4) Business specific.
   Briefly, discuss the last three explaining to the students that the purpose of this lesson is to focus on productivity.
5. Review the list of examples of productivity software with the students. Ask the students to explain why this category is named productivity. Guide them to see that this type of software is designed to make people more effective and efficient while performing daily activities in any type of business. Criteria might include: speed of production, quality of output/product, compatibility with other computers, ability to print, ease of usage for the novice, and allowance for user creativity.
6. Conclude the discussion by asking the students some of the following questions about anti-virus software:
   - Have they heard of computer viruses? What is a virus? Has anyone ever had one on his or her computer? If so, what happened to the computer and its software? What was the impact on the student? What was done to correct the situation?
7. Explain that a computer virus is an illegal and potentially damaging computer program designed to infect other software by attaching itself to the software with which it comes in contact. In other words, you can spread through software that you've borrowed or even purchased. The damage that viruses can do includes:
   - Interrupt processing by freezing a computer system temporarily and displaying sounds or messages.
   - It can destroy data. A well-known time bomb virus, the Michelangelo virus, destroys data on a user's hard disk on March 6, Michelangelo's birthday.

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- It can use up all the space on a disk drive. The virus is designed to repeatedly copy itself on a disk drive until no disk space remains and the computer stops working.

8. Describe the ways that anti-virus programs work :
   - By looking for viruses that attempt to modify the boot program, the operating system, and other programs
   - By looking for specific patterns of a known virus code, called a signature virus.
   - By inoculating existing program files.
   - By removing or repairing infected programs or files.
9. Finally, remind students that It is possible to catch a virus when downloading files from the Internet, especially through e-mail attachments.

HOT Activities:

1. Distribute the Application Types/Business Uses Chart (*JMOD14-1-2*) to each student and then assign them, individually or as a group, to analyze one of the computer catalogs or flyers looking for different types of productivity software packages. Have the students record their results on the chart and identify ways in which the packages might be used by various occupations in different businesses, in health or education institutions, or in sales and service organizations.
2. When completed, have each student or group present their findings and compile a master list on the board or transparency. As each software package goes up on the board, ask other students to identify additional business tasks for which it could be used. Record these ideas also. At the end of the discussion, be sure that each student has recorded all of the information on the board.
3. Have students analyze the composite list on the board and write a short explanation based on the following assumption: "If I can only buy one software program, which one would I buy to do everything that I need to do?"
4. If it has not already come up, explain the concept of integrated software applications like software suites. Ask the students to create an advertisement describing the ultimate integrated package that they would develop. For the purpose of this exercise and to make it more interesting, the students could have the full range of software categories available for their choices. Limit the ad to certain number of lines or words to challenge the students' writing abilities.
5. Assign the students the task of researching anti-virus software. Have them document their research in a written report in which they discuss what programs they found, what the costs were, and what the hardware requirements were. Based on their evaluations of the programs, they should also state which program they would buy/recommend and why.

Assessment methods:

- Instructor reviews written explanation of students' understanding of software applications and gives feedback.
- Observation by instructor of students preparing advertisements, instructor and or group assessment of ad content, and display of outstanding entries.
- Self-assessment by students of progress in accomplishing the company ad requirements.
- Students and instructor assess team work.
- Assessment by instructor of quality of information and organization during presentations and for written reports.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 14-1

1) **Computer software:**
    - a) System software-programs that are related to the control of the actual operation of the computer equipment
        - i) Operating system - necessary for a computer to operate, as soon as it is turned on, it is used by the computer
    - b) Examples of application software used in businesses for productivity:
        - i) Word processing - enables a computer to produce and modify documents that consist primarily of text
        - ii) Desktop publishing - allows user to design and produce professional looking documents that contain both text and graphics
        - iii) Electronic spreadsheet - allows you to organize numeric data in a "worksheet" or table format through columns and rows
        - iv) Presentation graphics - allow user to create documents with text and graphics that can be projected on a screen before a large group
        - v) Database - allows you to store, retrieve, manipulate, and update data that you have stored in an electronic filing cabinet
        - vi) Communications - transmits data from computer to computer
        - vii) Electronic mail - allows users to send messages to and receive messages from other computer users
        - viii)Browser – allows you to view web sites on the Internet
        - ix) Web development tools – allows for the creation or modification of a web site

2) **Uses of computer systems in different parts of business organization:**
    - a) Receptionist - records messages (voice mail computer system), general correspondence
    - b) Sales - allows to check product and customer info
    - c) Marketing - analyze sales data, produce media
    - d) Shipping/Receiving - inventory records
    - e) Manufacturing - cost control, scheduling
    - f) Engineering - design new products
    - g) Accounting - financial records and payments
    - h) Human Resources - tracking employee information/benefits
    - i) Information Systems - keep system running
    - j) Executive - strategic planning/communications

JMOD14-1-2

Application Types/Business Uses Chart

Lesson 14-1

Types of Applications	Types of Uses
Productivity	
Business-Specific	
Educational	
Entertainment	

Everything You Always Wanted to Know about Computers But Were Afraid to Ask – Part 2

LESSON 14-2: Be Safe - Backup *Approx. time: 1 class*

Lesson overview:

This lesson introduces the concept of backup and the procedures available to accomplish the task.

Students will demonstrate the ability to:

1. Follow instructions to complete the back up of files. (T/PC, ES-4)
2. Access and use information from computers and manuals. (ES-13)
3. Analyze and synthesize information. (F/RES)
4. Summarize, communicate, and document information. (F/RES)

Prerequisites: Lesson 14-1

Content required:

1) Explanation of backup concept:
    a) Methods/timing
    b) Importance
    c) Procedures

Resources:

Online Help
Any Windows 95/98 manual

Materials checklist:

- ✓ Step-by-Step handout (*JMOD14-2-1*) for each student to be modified or enhanced by instructor
- ✓ Four computer disks for each student

Equipment checklist:

- ✓ Computer for each student
- ✓ Printers with paper

Teaching strategy:

Part 1 – Introductory Discussion

1. Introduce the lesson by describing the concept of backup as merely making another copy of your data to store in a safe place just in case something catastrophic happened to your computer. Explain to the students that you never want to have only one copy of important files. Emphasize that getting into the habit of backing up on a regular basis is important for individuals, but

it is even more important for businesses. Ask the students why this would be true.

2. Canvass the students for possible backup procedures. For example:
    - Copying the files from drive C to a floppy in drive A.
    - Using Send To in Windows Explorer.
    - Dragging the file from its window on the hard drive to the floppy drive icon.
    - Using the special function of Backup and Restore.
3. Before explaining the backup/restore function, see if any of the students have used this function and let them describe how it was used and why. Stress that the Backup function provides a more systematic approach to the process but that the copy of the file made can be used only after it has gone through the Restore function.

Part 2 – Hands-On Computer Activity and Demonstrations

4. Distribute the Step-by-Step handout (*JMOD14-2-1*) and allow students to practice the different ways to backup data. Monitor their progress and offer assistance when needed.
5. Identify and/or demonstrate additional methods to accomplish the backing up of data such as sending copies of files to yourself at your Web Mail site, sending files to your e-mail, or backing up files to another directory or drive on the hard disk. If available, include LAN backups, CD writers, or Iomega options in your demonstration.
6. Using the WINZIP program, discuss and demonstrate the operations of zipping (file compression) and un-zipping (file decompression) used often in backing up or transfer of large files. Allow students to practice where possible.

HOT Activities:

1. Have students analyze the resulting files from the special Backup procedure (Backup 4) and compare it to the files on each of the other disks (Backup 1, Backup 2, and Backup 3) that used different methods of backing up. Provide time at the end of the lesson for students to share their comments with the class.
2. Instruct students to develop a reasonable backup procedure which they will maintain for their individual computers. Upon completion, ask them to print it out using a word processing program and post on the side of their monitor.

Assessment Methods:

- Observation by instructor of completed exercises in backing up data.
- Students compare their backup procedure ideas with other students and make revisions.
- Review and feedback by instructor of backup procedures developed by students.
- Students participate in discussion about file structure and sizes of backup data.

Instructor evaluation and comments for improvement:

STEP-BY-STEP HANDOUT
Lesson 14-2

1. In your own words, describe the purpose of **backup**:

2. If all of your personal files are not in the folder with your name on it in the main IT Practice folder, find them and move them there at this time.

3. Label your computer disks as Backup 1, Backup 2, Backup 3, and Backup 4.

4. Try each of the following four ways to backup data and document all of the steps in each process on a separate sheet of paper:

   - Copy all of the files in the folder with your name on it from drive C to the Backup 1 floppy in drive A.
   - Use Send To in Windows Explorer and place all of the files in the your folder on the Backup 2 floppy disk.
   - Drag the files from your folder's window on the hard drive to the floppy drive icon containing the Backup 3 disk.
   - Use the special function of Backup in Desktop Accessories under System Tools and follow the directions of the Wizard to backup the files in your folder on the Backup 4 disk.

Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

LESSON 14-3: Taking a Look Under the Hood *Approx. time: 1 class*

Lesson overview:

This lesson gives the students their first look at the insides of a computer. Since most organizations don't have the same type of computers throughout, the students should have an opportunity to consider a variety of PC configurations as they develop the diagram of a system unit.

Instructor's Notes:

1) In most labs, the computers should be off limits to students having access to what's inside. It is strongly recommended that the policy be continued. However, most labs do have worn out parts that could be used for the learning experiences. For this module, one or more stand-alone computers that are operable but not expensive or brand new would be sufficient to get the required experience. Inquire among your colleagues and center staff to determine the availability of older systems that can't be hurt if used for assembly practice. If you do receive a system from an outside source, consider having the donor sign a release form of some type just in case the system is returned inoperable.
2) If possible, make arrangements for at least four guest speakers with the following expertise:

▪ Lesson 14-3	System Unit Components in General
▪ Lesson 14-4	Motherboard Components
▪ Lesson 14-6	Peripherals and Upgrades for Computers
▪ Lesson 14-9	Installation of Peripherals

Check with community businesses or colleagues for possible candidates. Or, call local computer service centers and invite them to speak. Keep in mind that the more variety of experiences and guest speakers, the better for the students. Be sure to ask the speakers to bring in as much as possible of their equipment for display and demonstration.

Students will demonstrate the ability to:

1. Diagram, label and describe the functions of the components inside the system unit. (T-HW)
2. Listen attentively to the guest speaker and ask questions for clarification. (ES-5, ES-6)
3. Identify and use traditional and non-traditional sources of information. (F/RES)
4. Analyze the results for completeness, relevance, and accuracy. (F/ANL)
5. Make and use schematic diagrams or precise scale diagrams to enhance a solution. (F/PS&T)

Prerequisites: Lessons 14-1 and 14-2

Content required:
1) Review of Module 13 information of PC components
2) Components inside the system unit

Resources:
Computer Concepts by Parsons and Oja
Discovering Computers 2000 by Shelly, Cashman, & Waggoner
Any type of PC hardware manuals
A+ Certification testing software with diagrams and descriptions of components

Materials checklist:
- ✓ Transparency and handout of Diagram Requirements (*JMOD14-3-1*) for each student
- ✓ Transparency and handout of Specifications Requirements (*JMOD14-3-2*) for each student
- ✓ Optional: handout of 3-D Model Requirements (*JMOD14-3-3*) for each student
- ✓ Pad of large newsprint with enough pages for all students to have at least one sheet, rulers, pencils with erasers and colored pencils for drawing
- ✓ Sample computer equipment and tools for disassembly

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of this lesson is to review the parts of a computer which were studied in Module 13 and to take a closer look at the system unit.
2. Distribute the Requirements handouts for the Diagram and the Specifications (*JMOD14-3-1* and *JMOD14-3-2*). Provide time for the students to review the information and ask questions.
3. Emphasize that the goal by the end of the next lesson (14-4) is to have completed a diagram of the computer. Set the deadline for the specifications reports based on your lesson timeframe and Internet availability.

   Instructor's Note: Depending of the available equipment, there are three approaches: 1) If equipment is very limited, have students develop a diagram based on one example in class as the guideline and complete the actual measurements by using information and specifications from the manufacturer; 2) If there are enough equipment examples that each student can have individual time with one equipment example, have them rotate using the available equipment; 3) If there is enough equipment for students to work in pairs, use this approach.

Part 2 – Demonstration of System Unit Components

4. Review the list of major PC components by asking the students to identify what each part is and its function as you point to one of the equipment examples. (Use the actual equipment or a diagram provided on CDs provided by the texts included in the Resources section.) Continue to ask as many students as possible the same component questions to refresh their memories!
5. Guide the students through the steps to remove and to replace the components from the computer. For example, demonstrate how to remove a card from one of the slots and then put it back in correctly or how to remove a floppy drive from a bay or add another hard drive to a bay.
6. Pass around the components, whenever possible, so that the students can get the look and feel for the part.
7. If a guest speaker is available, have he or she give their presentation on the system unit components.

HOT Activities:

1. Distribute the materials to the students for use in completing their diagrams. Provide time for the students to begin preparing their diagrams and spec reports during the rest of the class time. (You may wish to have the students prepare two separate diagrams of the system unit and the motherboard rather than just one, to allow for more flexibility.)
2. Optional - Distribute the Requirements handout for the 3-D Model (*JMOD14-3-3*). Allow time for students to read and understand the parameters of the model's composition. Identify a due date for the models and have students bring in their materials each day for the assembly of the 3-D model.

Assessment Methods:

- Observation by instructor of students participating in identification of PC components and system unit parts.
- Student and instructor assessment of usefulness of information from guest speaker, if available.
- Instructor evaluation of student progress on completion of diagrams, spec reports, and the optional 3-D models.
- Student self assess progress in researching Web sites for required manufacturers' information.

Instructor evaluation and comments for improvement:

Requirements for Diagram of a Computer
Lesson 14-3

1. All components must be drawn to exact scale – refer to the specifications provided by the manufacturer.

2. Use a large sheet of newsprint-type paper for your drawing.

3. Label every component with a number that corresponds to its function in a legend.

4. Prepare the legend on a separate sheet of 8 ½ x 11-inch paper.

Requirements for Specifications of a Computer
Lesson 14-3

1. For each of the components listed on the legends, research the manufacturer's Web site until you have found the model and specification information for each, and print a copy of this information.

2. Determine the compatibility of the component and provide a copy of this information.

3. List the technical support phone number for the manufacturer of each component or the Web address at which technical support can be received to complete your assignment.

Requirements for 3-D Model of a Computer
Lesson 14-3

1. Electronic materials or any other types of parts previously found in a computer can not be used to represent components. For example, construction paper, cardboard, cloth, Styrofoam, or wood would be acceptable. Try to recycle materials found around your center.

2. Every component must be affixed to the model but not permanently attached. Future exercises will require that the components can be removed and replaced.

3. Label each component with the number that corresponds to the computer diagram.

4. Prepare a second legend on a separate sheet of paper for the model, with the name of the component.

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Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

LESSON 14-4: But Why a "Mother" Board? *Approx. time: 1 class*

Lesson overview:

Students continue to explore in even more detail what makes up the "brains" of the system unit and why motherboards are so valuable.

Students will demonstrate the ability to:

1. Diagram, label, and describe the features of the motherboard and its key components. (T/HW)
2. Identify and use traditional and non-traditional sources of information. (F/RES)
3. Listen attentively to the guest speaker and ask questions for clarification if required. (ES-5, ES-6)
4. Analyze the results for completeness, relevance, and accuracy. (F/ANL)

Prerequisites: Lessons 14-1, 14-2, and 14-3

Content required:

1) Motherboard and its key components

Resources:

Computer Concepts by Parsons and Oja
Discovering Computers 2000 by Shelly, Cashman, & Waggoner
Any type of PC hardware manuals
A+ Certification testing software such as New Horizons

Materials checklist:

✓ Extra-large paper available for student drawings and pencils
✓ Sample computer equipment
✓ Sample of motherboard

Teaching strategy:

Part 1 – Review Discussion

1. Review the goals of the module and explain that the purpose of this lesson is to study the motherboard in the system unit. Emphasize that by the end of this lesson the students should have completed their computer diagrams.
2. Ask students why the name 'mother' was given to this part. Ask them if they have ever heard of a 'daughter' board. Discuss the naming conventions and how the names are really quite descriptive in relating functionality.
3. Have students identify as many of the parts of the motherboard and their functions as they can. Guide the discussion to include at least these parts: 1)Microprocessor and CPU, 2)Upgrade sockets, 3)Memory, 4)Coprocessors,

5)Buses, 6)Expansion slots, 7)Expansion cards, and 8)Real-time clock.

Part 2 – Demonstration of Motherboard Features

4. Pass around the motherboard so that students can get a look and feel for the part. CAUTION: Since the motherboard houses valuables like the CPU and memory chips, tell students to handle it very carefully and check that it returns intact.
5. Demonstrate how some of the components of the motherboard can be removed and replaced. For example, guide them through the steps required for adding more memory to the motherboard or for changing the CPU.
6. Have the students practice inserting memory chips or other components on a motherboard whenever possible.
7. If a guest speaker is available, have he or she give their presentation on information about the motherboard.

HOT Activities:

1. Provide time for the students to finish preparing their diagrams of the computer with the motherboard and to continue working on their spec reports during the rest of the class time.
2. If students come across additional features that are available on the motherboard but not on any of the class examples, have them research the necessity/benefits of these features and prepare a written recommendation for considering the acquisition of the part.
3. Optional: Remind students to bring in their materials each day for the assembly of the 3-D model. As models begin to take shape, display them in a safe place in the lab.

Assessment Methods:

- Instructor assessment of students' participation in classroom demonstrations.
- Observation by instructor of students participating in class discussion with guest speaker, if available.
- Instructor evaluation of completed diagrams and written feedback provided.
- Observation and assessment by instructor of continued progress on spec reports and optional 3-D models.
- Student self-assessment of progress in researching Web sites for required manufacturers' information.

Instructor evaluation and comments for improvement:

Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

LESSON 14-5: Spec Check *Approx. time: 1 class*

Lesson overview:

This lesson will help the students determine the types of memory available and what is installed in their machines.

Students will demonstrate the ability to:

1. Compare and contrast main memory with auxiliary storage.(T/HW)
2. Run MS-DOS programs from Windows. (T/PC)
3. Analyze and synthesize information. (F/RES)
4. Access information from computer manuals. (ES-13)
5. Share information and explain procedures to other class members. (ES-7)

Prerequisites: Lessons 14-1 through 14-4

Content required:

1) Review of memory functions
2) Types of memory
3) Use of CHKDSK in MS-DOS

Resources:

Copies of computer hardware manuals

Original packing boxes that the systems came in (with specs on box)

Computers for Dummies book or text that explains in detail types of memory options

Managing & Maintaining Your PC by Jean Andrews has a good section on the different types of memory

Newspaper ads or catalogs showing system specs with memory highlighted

Materials checklist:

- ✓ Transparency and handout of IT Notes (*JMOD14-5-1*) for each student

Equipment checklist:

- ✓ Overhead projector
- ✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Display the IT Notes transparency and distribute the handout to the students (*JMOD14-5-1*).

2. Explain the five different types of memory that would be found in a computer system. Have students view examples of memory specs that are written in computer manuals, on the product box, or in advertisements. Ask the students to "translate" the different specs that are found and categorize them according to the five types discussed. List the examples that the students identify on the board.

Part 2 – Hands-On Computer Activity

3. Describe the use of earlier programs which used a different operating system than Windows called MS-DOS. (Note: MS-DOS stands for Microsoft Disk Operating System.) One of these simple programs can still be used to determine available memory – CHKDSK.
4. Instruct students to run this program and record their available memory:
   - Double click on MSDOS prompt on Desktop.
   - Type 'CHKDSK' and press Enter at the prompt.
   - The information should appear on the screen.
   - Close the window to exit the program.

HOT Activities:

1. Instruct students to try another MS-DOS command – 'MEM' which gives different information about the memory functions. Have students research what the significance of the information is and how it can be used.
2. Assign students the task of inventorying the storage, both main memory and secondary or auxiliary storage, of another system outside the lab, such as in another classroom or office at the center. If computers at different locations are not available, have students swap lab computers to practice their new skills. Allow the students to report their findings back to the class.
3. When the Specifications Reports are finished, conduct a round table discussion for the students to share their research results. Have the student compare and contrast the variety of models/brands for the same component used in different computers.

Assessment Methods:

- Students share and assess results of analysis of memory on computers.
- Instructor observes students running the CHKDSK program correctly.
- Students complete research on additional types of RAM memory.
- Assessment by instructor on ability by students to contribute to class discussions.
- Review and feedback provided by instructor for completed Specifications Reports.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 14-5

RAM (Random Access Memory)
Area in the system unit that temporarily holds data before and after it is processed.

Virtual Memory
Space on hard drive as an extension of RAM.

ROM (Read-Only Memory)
Set of chips permanently containing instructions that help a computer prepare for processing tasks but that can only be removed by replacement of chips.

CMOS (Complimentary Metal Oxide Semiconductor)
Battery powered memory that retains vital data about the system configuration, even when computer is turned off. If computer is upgraded, the CMOS must be updated through a setup program.

Cache
Special high-speed memory that gives the CPU more rapid access to data. Computer anticipates and loads next instruction in cache instead of further away in RAM.

Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

LESSON 14-6: Keeping Up with the Jones *Approx. time: 1 class*

Lesson overview:
Having completed their computer diagrams, students will continue to look at more components of a PC.

Students will demonstrate the ability to:

1. Explain the peripherals and components within the PC and how they interact. (T/HW)
2. Identify and use traditional and non-traditional sources of information. (F/RES)
3. Listen attentively to the guest speaker and ask questions for clarification of information as required. (ES-5, ES-6)
4. Interpret, synthesize and summarize data in a written document. (F/ANL)

Prerequisites: Lessons 14-1 through 14-5

Content required:
1) Peripherals and components of the PC

Resources:
Computer Concepts by Parsons and Oja
Any type of PC hardware manuals
Multimedia CD-ROM showing peripherals such as in *Discovering Computers 2000* by Shelly, Cashman, & Waggoner

Materials checklist:
- ✓ Samples of any and all of the computer components listed in the lesson
- ✓ Printer installation software for demonstration purposes

Equipment checklist:
- ✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Ask students to identify any peripherals that are part of the sample classroom equipment or that they may have used on other computers. Have the students describe how the peripheral increased the performance or functionality of the computer and/or how they interact with other parts of the computer.
2. Record the list of peripherals on the board as it is developed.
   For example, here are several categories with possible peripherals:

Input
- Typing keyboard (customized)
- Mouse (infrared, multiple button)
- Track balls and joysticks
- Pens/pads (art pads)
- Musical keyboard

Secondary or auxiliary storage
- Hard drive
- Floppy drive
- CD-ROM drive
- Tape drive

Output
- Monitor (different size screens)
- Printer (inkjet, laser, thermal)
- Modems (different speeds)

Other
- Sound cards
- Memory upgrades
- Specialty cards (video capture, accelerators, etc.)

3. If any multimedia presentations on a CD-ROM of these peripherals are available, show the presentations at this time to further emphasize the additional tasks that a computer can be used to accomplish.
4. Conclude the discussion by having students consider how businesses use these peripherals. Have them specifically address different types of companies and the variety of activities that might require different components. For example, a Production Department at a Radio Station has music software and uses a music keyboard; a Marketing Department produces ads with graphics and the artists prefer art pads and pens as well as 21" monitors and extra memory. Transferring large files from one computer to another within the company could be accomplished using a tape drive. A Human Resources Department uses a video capture card for digitizing pictures and movies to develop employee training materials.

Part 2 – Demonstration of Peripherals and/or Upgrades

5. Demonstrate how some peripherals are interchangeable on a computer such as regular keyboards or two mice. For example, switch keyboards with two computers and have students test to see if there is any change in performance.
6. Demonstrate how other peripherals need to be installed and cannot be easily switched. For example, have students connect a different printer to a computer and try to print a document. Explain that you must install a new printer driver (software instructions about the specific printer) on the computer before it can print properly. Guide the students through the steps of installing the printer.
7. If a guest speaker is available, have he or she give their presentation on information about peripherals and upgrades.

Part 3 – Hands-On Installation Activity

8. Have students practice hooking up peripherals or installing a printer if the equipment is available and monitor their successes closely.

HOT Activities:

1. Have students analyze the different ways that computers must address the installation of a peripheral or an upgrade. Assign each student a specific component to be responsible for explaining the complexity of installation to the class in either a written or oral report.

Assessment Methods:

- Observation by instructor of students participating in discussions and demonstrations of PC peripherals.
- Instructor evaluation and feedback of student reports analyzing installation of different peripherals/upgrades to computers.
- Student and instructor assessment of usefulness of information from guest speaker, if available.
- Observation by instructor of student's successful installation of a peripheral.

Instructor evaluation and comments for improvement:

Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

LESSON 14-7: These Boots Were Made For Talking *Approx. time: 1 class*

Lesson overview:
This lesson will cover details of the boot process and will have students prepare on their computer a document describing the steps of the process.

Students will demonstrate the ability to:
1. Describe and document the boot process. (T/HW)
2. Analyze/interpret and summarize/synthesize information in a written document. (F/RES)
3. Work with team to peer edit. (F/TW, ES-10)
4. Recognize and define a problem; identify possible solutions to the problem. (F/PS&T, ES-12)

Prerequisites: Lessons 14-1 through 14-6

Content required:
1) Boot process

Resources:
Computer Concepts by Parsons and Oja
Discovering Computers 2000 by Shelly, Cashman, & Waggoner
Any type of PC hardware manuals

Materials checklist:
- ✓ Transparency and handout of 'BOOT Print' (*JMOD14-7-1*) for each student

Equipment checklist:
- ✓ Overhead projector
- ✓ Computer display projector

Teaching strategy:
Part 1 – Introductory Discussion
1. Remind the students that their 3-D models are due to be completed at the end of this lesson.
2. Explain that the purpose of this lesson is to learn about the procedure called "booting-up" and to document it.
3. Distribute the 'BOOT Print' handout (*JMOD14-7-1*). Allow time for the students to review the information on the handout and ask questions. Using the computer display projector, walk the students through a typical boot-up. As the computer goes through each of the six phases, point out the following:

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- Power-up – when turning on the power switch, power is distributed to the fan and motherboard through the power supply.
- Starting the boot program – the microprocessor or CPU begins to execute instructions in the ROM.
- Power-on self test – during this phase the computer performs a diagnostic test of crucial system components. (For example, is the keyboard hooked up and functioning? Listen for beeps.)
- Loading the operating system – the operating system is copied from the hard drive and loaded into RAM.
- Checking the configuration and customization – here the microprocessor reads the configuration data and executes any customized start-up routines specified by the user. Specifically address the importance and roles of the system files:
  - IO.Sys
  - MSDOS.Sys
  - COMMAND.Com
  - CONFIG.Sys
  - AUTOEXEC.Bat
- Ready for commands and data

Part 2 – Hands-On Computer Activity

4. Before students begin documenting the boot process, instruct them in the proper procedure for repeating the boot process as many times as they might need to write down all of the information. Using a 'warm boot' feature, such as reset or Ctrl, Alt, and Delete is better than physically turning the system unit off and on.
5. Allow time for students to prepare their documentation. Monitor their progress and offer assistance as required.

HOT Activities:

1. Once the students have completed the written documentation of the boot process for their computer, have them choose a partner and exchange their versions of the process. Ask students to verify their partner's written documentation of the boot process and to correct/modify their documentation to match the actual boot process, as witnessed by their partner.
2. Conduct a series of demonstrations of "What ifs". For example, have the students determine what happens if a data disk is in the floppy disk drive during boot-up. Or, unplug the computer and have a student attempt to start the boot process. Continue to use the phases of the boot process to pose simple scenarios and ask students to develop possible solutions as they practice their ability to troubleshoot.

Assessment Methods:

- Observation by instructor of students participating in computer activities and classroom discussions.
- Evaluation by instructor of 3-D models compared to the diagrams prepared by the students.
- Assessment and written feedback by instructor of boot process documentation.

Instructor evaluation and comments for improvement:

BOOT Print Handout
Lesson 14-7

Student Name:____________________

Verified by:______________________

Carefully document the following six phases of the booting-up procedure of your computer. List the steps for each phase below and continue on the back of this sheet.

1. Power-up
2. Start boot program
3. Power-on self test (POST)
4. Load operating system
5. Check configuration and customization
6. Ready for commands and data

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LESSON 14-8: Is There a Doctor in the House? *Approx. time: 1 class*

Lesson overview:

Whether the students are working at a company or in their own computer lab at the center, the chances of actually assembling a computer are not great unless they are the actual computer technician for the company or center, with specific computer upgrade or repair responsibilities. Nowadays, most computers are purchased with every component already inside and Windows 95/98 eliminates many of the earlier considerations computer users had when changing components.

In this lesson, however, students will participate in a simulation activity to test their knowledge of the computer components.

Students will demonstrate the ability to:

1. Simulate the assembly of computers. (T/HW)
2. Recognize and define the problem. (F/PS&T)
3. Follow directions and stay on task. (ES-4, ES-15)
4. Communicate the process of defining the problem and its cause and planning the implementation of a solution. (F/PS&T)

Prerequisites: Lessons 14-1 through 14-7

Content required:

1) Students' spec reports
2) Students' diagrams

Resources:

Computer Concepts by Parsons and Oja
Any type of PC hardware manuals

Materials checklist:

- ✓ Instructor Worksheet (*JMOD14-8-2*) for each student
- ✓ Transparency and handout of Student Worksheet (*JMOD14-8-1*) for each student
- ✓ Demonstration computer/s for simulation

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 – Pre-class Preparation for Instructor

1. Using the computer diagrams and spec reports, prepare an Instructor Worksheet (*JMOD14-8-2*) for each student or groups of students. Analyze the information that has been provided and study the spec report. Develop as many different problems or compatibility issues as the student/s have time to figure out and correct during the class period. Try to come up with realistic scenarios and common problems that might be encountered by the average computer user. Write each of these modifications or questions posed on the worksheet. For example, switch, move, remove or set aside some of the parts on their demonstration computer, leave a disk in the drive, disconnect cords, etc. (Use this list of changes on the worksheet to compare with the students' analysis of the Before Condition and the corrective action that they will take.)

Part 2 - Individual or Group Activity

2. Distribute the Student Worksheets (*JMOD14-8-1*) and explain that the purpose of today's lesson is to determine what's been changed or removed on their computer. Tell the students that this is a simulation of their ability to troubleshoot and emphasize that they document each step completely, as required on their worksheets.
3. Allow students time to complete the troubleshooting exercises during the remainder of the class.

HOT Activities:

1. At the end of the class, ask students to write a short paragraph describing how well they think they did during the problem solving activity. Have them attach this to their worksheet to be turned in.

Assessment Methods:

- Evaluation by instructor of students, completed worksheets, as compared to the instructor's worksheets.
- Written feedback of assessment of accuracy of troubleshooting given to each student.
- Student self-assessment of their ability to figure out changes made to the model.

Instructor evaluation and comments for improvement:

Student Worksheet
Lesson 14-8

Student Name:____

Before Conditions: (List components moved, switched, or removed.)

Actions taken to correct: (List steps required to return the model to its correct condition.)

Instructor Worksheet
Lesson 14-8

Student Name:____

Before Conditions: (List components moved, switched, or removed.)

Everything You Always Wanted to Know about Computers But Were Afraid to Ask—Part 2

LESSON 14-9: Eliminating Installation Nightmares *Approx. time: 1 class*

Lesson overview:
In this lesson students will consider installation do's and don'ts.

Instructor's Note: If the equipment is available to allow all students to practice a hands-on installation, that would be great. Realistically, if not, try to set up some simple, sample exercises like installing a modem. Then rotate small groups of students through the process of the presentation of the material and the actual procedures. Ask students to keep a detailed journal of all of their interactions with the computer regardless of which method you choose.

Also consider contacting a local computer retailer and requesting, just for one day, the use of some type of new peripheral to practice installation on every computer such as an art pad.

Students will demonstrate the ability to:

1. Listen attentively to the guest speaker and ask questions for clarification. (ES-5, ES-6)
2. Safely work with personal computer components. (T/HW, ES-16)
3. Describe how to install and configure peripheral devices or RAM and then reconfigure CMOS. (T/HW)
4. Describe how conflicts arise between components in a PC. (T/HW)
5. Access and use information from computers and manuals. (F/RES, ES-13)
6. Communicate all phases of the troubleshooting process and develop recommendations. (F/PS&T)

Prerequisites: Lessons 14-1 through 14-8

Content required:

1) Describe how conflicts arise between components in a PC
2) Installation considerations for peripherals and RAM
3) Access and configuration of the CMOS set up
4) Safety precautions when working with PCs, especially static electricity

Resources:
Computer Concepts by Parsons and Oja
Discovering Computers 2000 by Shelly, Cashman, & Waggoner
Any type of PC hardware manuals

Materials checklist:

✓ Samples of computer equipment and manuals for installation information

Equipment checklist:

✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of this lesson is to address a variety of installation issues. Have the students keep in mind that, as technology improves, many of these issues may become moot. With the use of operating systems such as Windows 95/98 and the development of such computers as the iMac, using the computer has become easier and functionality has improved.

Part 2 – Demonstration of Installation Procedures

2. Explain to the students how on some computers conflicts between two or more peripherals can occur. Using the computer display projector, show the students where these are most commonly found by:
   - Click Start, click Settings, then click Control Panel.
   - Double-click on System icon.
   - Click on the Device Manager tab, click Computer, and then Properties.
   - Toggle through each of the four resource categories -- IRQ, I/O, DMA, and Memory -- under View Resources.
3. Discuss in detail the definitions of each of the four resource categories using on-line resources or the texts referred to in the beginning of the lesson. Have the students write down the IRQ settings for the hardware in their PC in the journal that they are keeping. Point out that it is easy to see what would happen if tow devices have the same interrupt.
4. Guide the students through the steps of an installation of a modem, additional RAM, or other peripheral. If possible, have students read the installation manual along with watching the demonstration of each step. (If a Plug and Play installation is not utilized, then carefully explain to the students how the CMOS must be updated if required. Have students refer to their texts for a more detailed description, if possible.)
5. If a guest speaker is available, have he or she give their presentation on information about installation procedures.

HOT Activities:

1. Assign the students (in pairs or individually) the task to install one new item on each of their computers. Before the students start, review the safety procedures addressed in Module 13-3. When students complete the installation processes, have them test the item to determine that the procedure was successful. Remind students to keep their journals updated with all of the steps performed throughout their installations.
2. Have students read and analyze some of the hardware manuals for the different samples of computer equipment displayed or demonstrated, looking for similarities in the installation processes. Close the discussion by outlining

on the board a summary of the do's and don'ts on installations. Have several students develop a poster of the do's and don'ts for permanent display in the classroom.

Assessment Methods:

- Observation by instructor of students participating in discussions and demonstrations of installation of PC peripherals.
- Student and instructor assessment of usefulness of information from guest speaker.
- Assessment by instructor and individual students of successful installation of a computer peripheral and of the completeness of their journals.

Instructor evaluation and comments for improvement:

LESSON 14-10: Together Again *Approx. time: 1 class*

Lesson overview:
For the final activity in this module, students have an opportunity to review the earlier assembly exercise and then prepare a written recommendation on the care and maintenance of their computers.

Students will demonstrate the ability to:
1. Describe and perform routine maintenance for hardware. (T/HW)
2. Work effectively as a team member. (ES-10, F/TW)
3. Document technical procedures in written form. (F/PS&T)
4. Use effective communication skills in a team environment. (F/TW, ES-10)

Prerequisites: Lessons 14-1 through 14-9

Content required:
1) Care and maintenance required for computer hardware.

Resources:
Computer Concepts by Parsons and Oja
Any type of PC hardware manuals
Instruction manuals of computer equipment

Materials checklist:
- ✓ Evaluated Student Worksheets
- ✓ Enough instruction manuals for computer equipment and/or household appliances to distribute to each student or groups of students

Teaching strategy:
Part 1 – Introductory Discussion
1. Return the student worksheets for the simulation exercise and have students review their evaluations. If necessary, spend time discussing any issues that came to light from this exercise.
2. Also, consider allowing time for additional assembly practice, if needed.
3. Explain that the purpose of this final lesson is to develop a computer care and maintenance guide for their computer lab at the center.

Part 2 – Group Activity
4. Distribute the instruction manuals to the groups or to individual students working in groups, depending on the number you have available.
5. Instruct the students to identify all of the instructions in the various manuals which relate to care or maintenance and list these for the group.

6. Ask the groups to then consider which of the instructions could be considered important for their computer equipment. Encourage them to modify some of the instructions so as to broaden their interpretation to develop new instructions that might not be included in any of the manuals.
7. When the members of the group have considered all of the instructions, have them develop a written list from the group.

HOT Activities:

1. Have each of the groups share their findings and resulting list in a class discussion. During the discussion, ask the students to consider the phrases "An ounce of prevention is worth a pound of cure" or "A stitch in time saves nine" and how they might relate to their list of instructions for care and maintenance of the computer equipment.
2. Have students develop a compiled list of recommendations for the care and maintenance of all of the computers in the lab at the center.
3. Conduct a "master assembly bee" with all of the students in the classroom participating in the process. Students have to sit down if they cannot correctly describe the component's correct label, function, or placement.

Assessment Methods:

- Observation by instructor of group process and successful completion of care and maintenance list.
- Evaluation of accuracy and completeness of lists with written feedback provided by the instructor. Superior lists are displayed in the classroom.
- Assessment by students of ability to successfully participate in the "master assembly bee".

Instructor evaluation and comments for improvement:

Module 15:
Upgrading Your Computer Equipment – Part 1

Module 15 – Upgrading Your Computer Equipment - Part 1

Learner Outcomes:

Analysis/Research

1. Gather data to identify requirements; interpret and evaluate the requirements.
2. Analyze the process interactively to continuously improve the outcome.
3. Understand constraints, generate alternatives, consider risks, and evaluate options.
4. Identify and use traditional and non-traditional sources of information.
5. Analyze, organize, and present research material.

Teamwork/Task Management

6. Organize and work in a team setting.
7. Organize and prioritize multiple tasks in the most effective way.
8. Allocate time and resources according to task complexity and priority.
9. Evaluate task outcomes and continuously improve process.

Documentation and Business Communication

10. Create and present accurate and effective communication (oral and written) tailored to the specific purpose and needs of the audience.

PC Principles and Operations/Computer Trends in Business and Society

11. Understand how Information Technology impacts the operation and management of business and society.
12. Understand the past and current trends in computer technology.
13. Understand issues affecting system purchase and upgrade decisions.

Prerequisites: Modules 13 and 14

INSTRUCTOR'S NOTE: This module is project-oriented. Although specific lesson plans are provided for individual days, you may choose to disseminate all of the information and details for the project during the first class and use the lesson plan timeframe as progress checks during class.

Total Class Time: Approximately 10 – 20 hours

Outside readings and other resources:

- AOL's Time Savers – Buy a Computer
- *Tom's Hardware Guide: High Performance PC Secrets* by Tom Pabst
- *Upgrading and Repairing PCs (10th Ed.)* by Scott Mueller
- *Computer Technology and Social Issues* by David Garson
- *Social Issues in Technology: A Format for Investigation* by Paul Alcorn

Module 15 – Upgrading Your Computer Equipment - Part 1

Module overview:

Buying a personal computer is a very important decision. It requires you to find and purchase the system best suited to your needs within a budget of both time and money. And, as soon as you have purchased that wonderful computer system, there always seems to be a newer, cheaper, faster, better version....

Personal computer buyers generally fall into three categories:

- First-time buyers
- Replacement buyers
- Upgrade buyers

According to a recent survey of consumers in North America, first-time buyers make up 40% of the personal computer market. The survey also discovered that most of the first-time buyers have little computer experience and that more than 70% of the first-time home computer buyers do not even use a computer at work!

In this module you will consider buying decisions for new computers as well as replacement and upgrade costs. Working with a committee and a prepared list of computer equipment, you will produce two proposals for the replacement/enhancement of the computers.

Lesson Titles:

- 15-1 Wishin' and Hopin'
- 15-2 No. No. They Can't Take That Away From Me!
- 15-3 It's Your Thing. Do What Ya Wanna Do....
- 15-4 What the World Needs Now
- 15-5 Money, Money, Money

Upgrading Your Computer Equipment - Part 1

LESSON 15-1: Wishin' and Hopin' *Approx. time: 1 class*

Lesson overview:

The students are introduced to the project and form committees. The committees will identify the steps necessary to complete the project and develop assignments/responsibilities for each of the committee members. One of the first steps for the committees will be the analysis of the equipment and development of a detailed description of the current status of computer capabilities.

Students will demonstrate the ability to:

1. Break down project into series of meaningful tasks and develop a realistic task list. (F/PM)
2. Work effectively as a committee with an end-product in mind. (ES-10, F/TW)
3. Identify relevant sources of information for the project. (F/RES)
4. Follow directions to gather data and extract relevant information. (F/PM, ES-4)
5. Describe the functions of the components of a PC. (T/PC)
6. Analyze information for completeness, relevance, accuracy, and consistency and synthesize information. (F/ANL)

Prerequisites: Modules 13 and 14

Content required:

1) Outline of project requirements
2) Inventory of computer equipment
3) Timetable for planning purposes
4) Review of PC components and functions
5) Review of uses of computers

Resources:

Chapter Five: The Computer Marketplace in Computer Concepts, Parsons and Oja

Materials checklist:

- ✓ Transparency and handout of Module Overview (*JMOD15-Ovr*) for each student
- ✓ Transparency and handout of Proposal Guidelines (*JMOD15-1-1)* for each student
- ✓ Sample of IRCO Simulation Proposal Guidelines (*JMOD15-1-2)*
- ✓ Sample of IRCO Branch #1 Computer Equipment handout (*JMOD15-1-3*)
- ✓ Sample of IRCO Branch #2 Computer Equipment handout (*JMOD15-1-4*)

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- ✓ Sample of IRCO Branch #3 Computer Equipment handout (*JMOD15-1-5*)
- ✓ Sample of IRCO Branch #4 Computer Equipment handout (*JMOD15-1-6*)
- ✓ Sample of IRCO Branch #5 Computer Equipment handout (*JMOD15-1-7*)

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 - Before Class Instructor Preparation

1. If not using the IRCO simulation, determine which computers students will use as the subject of their proposals. For example, you can use one of the center's computer labs or devise an original list. Or, for students who are less experienced, you can have them base their proposals on one computer only.
2. Prepare a typed list of the computer/s in a spreadsheet format for distribution to the student committees.

Part 2 – Introductory Discussion

3. Distribute the Module Overview (*JMOD15-Ovr*), the Proposal Guidelines (*JMOD15-1-1*), and the spreadsheet list/s of computer equipment to all of the students. Display the transparencies to use throughout the discussion.

IRCO Simulation-Optional

- Distribute the Proposal Guidelines for IRCO (*JMOD15-1-2*) and the IRCO Computer Equipment handouts for each branch (*JMOD15-1-3* through *JMOD15-1-7*) to use in the introductory discussion. Consider having each committee using the same 25 computers which would standardize the "playing field" and allow the committees to come up with different approaches to the same problems.

4. Allow time for the students to review the contents before starting the discussion.
5. Ask questions of individual students to determine their comprehension of the scope of the project and highlight significant details as they are discussed. For example: Why are proposals necessary? What information should be included in the proposals? What tasks are required and where would the committees begin? Why upgrade and to what extent is it necessary?
6. Guide students through the exploration of the expectations for the two proposals until you are satisfied that everyone understands the project requirements. Make sure that the students are familiar with the computer terminology and functions within each of the categories of components.
7. Encourage them to consider business productivity and to identify other business needs or uses that they may need to include in analyzing the computer equipment lists.
8. Develop with the students guidelines for writing effective proposals and/or step the students through the development of an outline for their proposals.

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Part 3 – Group Activity

9. Make the committee assignments with no more than five students to a committee (or you may allow the students to form their own committees).
10. After students have formed their committees, review the following guidelines for a successful committee:
    - Appoint a chairperson, recorder, and presenter/s
    - Establish ground rules for meetings (e.g. limited time for each person to speak, everyone participates)
    - Establish a decision-making method (e.g. consensus number, simple majority, etc.)

HOT Activities:

1. Ask each committee to develop a written list of activities to accomplish all of the tasks of the project and a timeline for completion. Encourage committee members to anticipate any unforeseen delays or problems and consider alternatives that will make sure the deadline is met.
2. Have the committees assign each member with specific responsibilities for the successful completion of the project and prepare a task list document for each member.
3. Have each committee member analyze one of the lists of computer equipment to determine the current equipment status (how many different types of CPUs, how much memory, how many different sizes of hard drives, etc.). Encourage students to use a spreadsheet version of their lists that they can sort and analyze in different ways. After each member has completed his/her analysis, ask the committees to discuss members' results for comparisons and trend similarities. From the resulting discussion, have each committee prepare a written summary of the combined analyses. This document will then become part of the final proposals.
4. If possible, assign a few students to interview center administrators or business owners who have experienced the acquisition/replacement of large groups of computers. Have students develop a set of guidelines with considerations or recommendations from the interviewee's suggestions to share with the entire class.

Assessment Methods:

- Observation and assessment by instructor of committee members' ability to work effectively with each other.
- Participation evaluated by instructor during classroom discussions.
- Assessment and feedback by instructor of documents prepared by the committees that analyze the current computer equipment lists.
- Evaluation and feedback provided by the instructor of the committees' lists of tasks and timelines.
- Review and evaluation by instructor of individual task lists for each student.

Instructor evaluation and comments for improvement:

7

Proposal Guidelines
Lesson 15-1

Your committee is responsible for the development of two proposals.

The basis of the first proposal is the immediate acquisition of state-of-the-art computer equipment with consideration of future needs. The second proposal should be based on the most effective way to upgrade the same fleet of computers for the least amount of money.

Each of the proposals requires written descriptions of the following:

- Listing of the type and capability of the current computer equipment
- Analysis of current needs of users with projection for future demands
- Research of computer upgrades/equipment available in the marketplace
- Establishment of computer equipment standards (minimum configuration acceptable)
- Recommendations for replacement/upgrade of each computer and estimated costs
- Rationale for choices recommended
- Plans for recycling, rebuilding, re-assignment, and/or disposal of the current computer equipment

It also will be the responsibility of each committee to plan how to accomplish these tasks in the limited amount of time available and to assign work equitably to each committee member.

IRCO Simulation
Lesson 15-1

The IRCO Board of Directors will be meeting in a couple of months and Jordan Ono, our president, has begun to think about issues he would like to present.

One of his most pressing concerns is the quality of the computer equipment currently at the five branch offices and the impact it might be having on the productivity of the different departments. Jordan would like the Board to consider at least two proposals on upgrading the computer equipment.

Here's the situation: each branch office has a variety of 25 computers evenly divided between five departments – Accounting, Personnel, Production, Sales/Marketing and Customer Service. Only a few of the computers at each site are networked or even capable of being networked. Some of the computers have CD-ROM drives (along with sound cards and a set of speakers) but none has any of the newer features for multimedia purposes. All of the computers are standard brands that could easily be upgraded; there's nothing proprietary about any of the equipment. Most of the hard drives are near capacity and some of the employees have complained about their not having enough memory. However, all of the computers have 56k baud modems. That upgrade was made over a year ago to have e-mail functionality throughout the company. Because of the different ages of the computers, none is using a current Windows operating environment – all of the Pentiums or better are using Windows 95, at least.

The basis of the first proposal should be the immediate acquisition of state-of-the-art computer equipment for each department at every branch with consideration of future needs. The second proposal should be based on the most effective way to upgrade the entire fleet of computers at each site for the least amount of money.

Each of the proposals would require written descriptions of the following:

- Listing of the type and capability of the current computer equipment at each branch
- Analysis of current needs of users in the five departments with projection for future demands
- Research of computer upgrades/equipment available on the market
- Establishment of computer equipment standards (minimum configuration acceptable) for each department at IRCO
- Recommendations for replacement/upgrade of each computer at every site and estimated costs
- Rationale for choices recommended

- Plans for recycling, rebuilding, re-assignment, and/or disposal of the current computer equipment

Jordan would like all of the Production Assistants to work in committees. Each committee would be responsible for presenting its proposals as soon as it can be scheduled. At that time everyone would review all of the committees' proposals and would develop the final proposals for the Board of Directors' meeting.

It also will be the responsibility of each committee to plan how to accomplish these tasks in the limited amount of time available and to assign work equitably to each committee member.

Jordan is very enthusiastic about IRCO becoming a leader in the use of technology. He knows that, with the help of each Production Assistant, the best possible proposals will be ready for presentation to the Board of Directors. He appreciates everyone's efforts with this project.

For your portfolio, you will produce with your committee a written document with two proposals for the replacement/enhancement of up to 125 computers located at the five branch offices of IRCO.

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Computer Equipment for Branch #1
Lesson 15-1

No.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	15"	Pentium	16	800MB	Yes	No	No
2	21"	Pent Pro	32	2GB	Yes	No	Yes
3	15"	386	8	320MB	No	No	No
4	17"	Pentium	16	800MB	Yes	No	No
5	17"	486	8	540MB	No	No	No
6	15"	486	8	540MB	No	No	No
7	21"	Pentium	16	800MB	Yes	No	No
8	15"	Pentium	16	800MB	Yes	No	No
9	17"	Pent Pro	32	2GB	Yes	No	Yes
10	21"	Pentium	16	800MB	Yes	No	No
11	15"	Pentium	16	800MB	Yes	No	No
12	17"	486	8	540MB	No	No	No
13	15"	Pentium	16	800MB	Yes	No	No
14	17"	Pentium	16	800MB	Yes	No	No
15	21"	Pentium	16	800MB	Yes	No	No
16	15"	486	8	540MB	No	No	No
17	21"	Pentium	16	800MB	Yes	No	No
18	15"	Pentium	16	800MB	Yes	No	No
19	17"	Pentium	16	800MB	Yes	No	No
20	17"	486	8	540MB	No	No	No
21	21"	Pentium	16	800MB	Yes	No	No
22	21"	Pent Pro	32	2GB	Yes	No	Yes
23	15"	386	8	320MB	No	No	No
24	17"	486	8	540MB	No	No	No
25	21"	Pentium	16	800MB	Yes	No	No

Computer Equipment for Branch #2
Lesson 15-1

No.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	17"	Pent Pro	32	2GB	Yes	No	Yes
2	21"	PP/MMX	32	2GB	Yes	No	Yes
3	21"	Pentium	16	800MB	Yes	No	No
4	15"	386	8	320MB	No	No	No
5	17"	486	8	540MB	No	No	No
6	17"	Pentium	16	800MB	Yes	No	No
7	21"	Pentium	16	800MB	Yes	No	No
8	17"	486	8	540MB	No	No	No
9	15"	386	8	320MB	No	No	No
10	21"	Pentium	16	800MB	Yes	No	No
11	17"	Pentium	16	800MB	Yes	No	No
12	17"	486	8	540MB	No	No	No
13	17"	Pent Pro	32	2GB	Yes	No	Yes
14	21"	PP/MMX	32	2GB	Yes	No	Yes
15	17"	Pentium	16	800MB	Yes	No	No
16	21"	PP/MMX	32	2GB	Yes	No	Yes
17	21"	Pentium	16	800MB	Yes	No	No
18	17"	486	8	540MB	No	No	No
19	17"	Pentium	16	800MB	Yes	No	No
20	17"	486	8	540MB	No	No	No
21	15"	486	8	540MB	No	No	No
22	15"	486	8	540MB	No	No	No
23	17"	Pentium	16	800MB	Yes	No	No
24	15"	Pentium	16	800MB	Yes	No	No
25	21"	Pentium	16	800MB	Yes	No	No

Computer Equipment for Branch #3
Lesson 15-1

No.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	21"	Pent Pro	32	2GB	Yes	No	Yes
2	21"	Pentium	16	800MB	Yes	No	No
3	21"	PP/MMX	32	2GB	Yes	No	Yes
4	17"	486	8	540MB	No	No	No
5	17"	Pentium	16	800MB	Yes	No	No
6	17"	486	8	540MB	No	No	No
7	17"	Pent Pro	32	2GB	Yes	No	Yes
8	15"	486	8	540MB	No	No	No
9	15"	386	8	320MB	No	No	No
10	21"	Pent Pro	32	2GB	Yes	No	Yes
11	15"	Pentium	16	800MB	Yes	No	No
12	17"	Pentium	16	800MB	Yes	No	No
13	15"	Pentium	16	800MB	Yes	No	No
14	17"	486	8	540MB	No	No	No
15	21"	PP/MMX	32	2GB	Yes	No	Yes
16	21"	Pentium	16	800MB	Yes	No	No
17	15"	486	8	540MB	No	No	No
18	17"	Pentium	16	800MB	Yes	No	No
19	17"	486	8	540MB	No	No	No
20	17"	486	8	540MB	No	No	No
21	17"	486	8	540MB	No	No	No
22	21"	Pentium	16	800MB	Yes	No	No
23	17"	Pentium	16	800MB	Yes	No	No
24	15"	486	8	540MB	No	No	No
25	17"	486	8	540MB	No	No	No

Computer Equipment for Branch #4
Lesson 15-1

No.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	15"	Pentium	16	800MB	Yes	No	No
2	21"	PP/MMX	32	2GB	Yes	No	Yes
3	15"	486	8	540MB	No	No	No
4	17"	Pent Pro	32	2GB	Yes	No	Yes
5	21"	Pentium	16	800MB	Yes	No	No
6	21"	Pentium	16	800MB	Yes	No	No
7	17"	Pentium	16	800MB	Yes	No	No
8	21"	Pentium	16	800MB	Yes	No	No
9	21"	PP/MMX	32	2GB	Yes	No	Yes
10	17"	Pentium	16	800MB	Yes	No	No
11	21"	Pentium	16	800MB	Yes	No	No
12	21"	Pent Pro	32	2GB	Yes	No	Yes
13	15"	Pentium	16	800MB	Yes	No	No
14	21"	Pentium	16	800MB	Yes	No	No
15	21"	PP/MMX	32	2GB	Yes	No	Yes
16	17"	Pent Pro	32	2GB	Yes	No	Yes
17	15"	Pentium	16	800MB	Yes	No	No
18	17"	Pentium	16	800MB	Yes	No	No
19	21"	Pentium	16	800MB	Yes	No	No
20	15"	Pentium	16	800MB	Yes	No	No
21	17"	Pentium	16	800MB	Yes	No	No
22	17"	486	8	540MB	No	No	No
23	15"	386	8	320MB	No	No	No
24	21"	PP/MMX	32	2GB	Yes	No	Yes
25	21"	PP/MMX	32	2GB	Yes	No	Yes

Computer Equipment for Branch #5
Lesson 15-1

No.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	17"	486	8	540MB	No	No	No
2	15"	486	8	540MB	No	No	No
3	17"	Pentium	16	800MB	Yes	No	No
4	17"	Pentium	16	800MB	Yes	No	No
5	17"	Pentium	16	800MB	Yes	No	No
6	15"	Pentium	16	800MB	Yes	No	No
7	21"	Pentium	16	800MB	Yes	No	No
8	17"	Pent Pro	32	2GB	Yes	No	Yes
9	21"	Pentium	16	800MB	Yes	No	No
10	21"	PP/MMX	32	2GB	Yes	No	Yes
11	17"	Pentium	16	800MB	Yes	No	No
12	15"	386	8	320MB	No	No	No
13	21"	Pent Pro	32	2GB	Yes	No	Yes
14	17"	Pentium	16	800MB	Yes	No	No
15	15"	386	8	320MB	No	No	No
16	17"	486	8	540MB	No	No	No
17	17"	Pent Pro	32	2GB	Yes	No	Yes
18	15"	486	8	540MB	No	No	No
19	17"	Pent Pro	32	2GB	Yes	No	Yes
20	15"	386	8	320MB	No	No	No
21	15"	386	8	320MB	No	No	No
22	17"	486	8	540MB	No	No	No
23	15"	Pentium	16	800MB	Yes	No	No
24	21"	Pentium	16	800MB	Yes	No	No
25	15"	486	8	540MB	No	No	No

Upgrading Your Computer Equipment - Part 1

LESSON 15-2: No. No. They Can't Take That Away From Me! *Approx. time: 1 class*

Lesson overview:

Once the committees of students have analyzed the lists of computer equipment, they must first determine what the equipment standard will be, regardless of whether they replace or upgrade each computer. This lesson also provides time for the students to research the availability and cost of each option for every computer.

Students will demonstrate the ability to:

1. Use effectively written and on-line sources of information. (F/RES)
2. Use various Internet search techniques and tools to locate information. (T/INT)
3. Analyze the research results for completeness and accuracy. (F/ANL)
4. Continue to work effectively within committee. (F/TW, ES-10)
5. Explain the issues in buying/upgrading a computer system. (T/PC)
6. Synthesize and summarize the information. (F/ANL)
7. Monitor progress of project and stay on tasks. (F/PM, ES-15)

Prerequisites: Lessons 15-1

Content required:

1) Current product availability and cost for computer components

Resources:

Chapter Five: The Computer Marketplace in Computer Concepts, Parsons and Oja
Internet resellers of computer equipment
Local retail computer stores and catalogs

Materials checklist:

- ✓ Spreadsheet files for computer equipment (If using the IRCO simulation files, rename them to *Branch1*, *Branch2*, *Branch3*, *Branch4*, and *Branch5*)
- ✓ Analysis of the computer equipment section for the proposal, completed by each committee

Equipment checklist:

- ✓ Computers with spreadsheet, word processing software and Internet access

Teaching strategy:

Part 1 – Introductory Discussion

1. Review the process for the development of the proposals with the students and explain the need for a standard (or recommended) configuration for the new computer equipment.
2. Discuss with the students the details of the parameters of buying decisions for computers. For example, is it only price that makes the difference? What other factors are considered, if any? Service? Warranty? Speed? In-stock? Product name recognition?
3. Conclude by preparing a list on the board of factors which should be considered when buying or upgrading computers and compare/contrast these to other issues that might be important in the acquisition of equipment, such as budget or timing.

Part 2 – Group Activity

4. Have each committee develop a written list of the computer configuration standards for the new computers. Encourage committee members to consider carefully the computing needs and uses, both now and in the future, for the intended recipients of the computer equipment.
5. Explain to the committees that even as they discuss and finalize their recommendations for standards, these could change after their research is completed.

HOT Activities:

1. Using a variety of on-line sources or computer magazines, ask each committee to assign its members responsibilities for gathering up-to-date specification, price, and availability information on the different computer components required for the replacement/upgrading based on their proposed standards. Have members document their findings of at least three different sources for consideration.
2. After each committee member has completed his/her research, have the committees discuss these sources and choose the best for each of the different computer components. Instruct the committees to prepare a written summary of their choices with a short explanation of why it was considered the best for their purpose.
3. Have students review their timelines and tasks lists. Encourage committees to consider revisions to the tasks lists should delays occur or be necessary.

Assessment Methods:

- Assessment by instructor of student participation in classroom discussions.
- Review and evaluation by instructor of committees' lists of equipment standards.
- Review and evaluation by instructor of summaries of research on computer components prepared by committees.
- Assessment by students of project progress.

Instructor evaluation and comments for improvement:

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Upgrading Your Computer Equipment - Part 1

LESSON 15-3: It's Your Thing. Do What Ya Wanna Do.... *Approx. time: 1 class*

Lesson overview:

During this lesson, the student committees develop their recommendations for the replacement or upgrading of computer equipment. With their research available and using the equipment standards established during the previous lesson, students are given the opportunity to evaluate each computer on their lists, determine its fate, and then provide a written explanation of their rationale.

Students will demonstrate the ability to:

1. Given a certain environment, make recommendations for system upgrade or purchase. (F/ANL)
2. Prepare a cost/benefit estimate for each alternative. (F/RES)
3. Summarize and communicate the information. (F/D&BC)
4. Accomplish tasks in an efficient manner and on schedule. (ES-15, F/PM)
5. Work collaboratively to accomplish committee goals. (ES-10, F/TW)

Prerequisites: Lessons 15-1 and 15-2

Content required:

1) Computer equipment lists
2) Catalog/product information on PC components

Resources:

Chapter Five: The Computer Marketplace in _Computer Concepts_, Parsons and Oja

Internet resellers of computer equipment and replacement parts

Local retail computer stores and catalogs

Materials checklist:

- ✓ Spreadsheet files for computer equipment Written summaries of computer components chosen by each committee for the replacement/upgrading prepared in Lesson 15-2

Equipment checklist:

- ✓ Computers with spreadsheet, word processing software and Internet access

Teaching strategy:

Part 1 – Introductory Discussion

1. Review the progress of the committees by having a spokesperson from each

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committee give a status report to the class.

2. Also, encourage the committees to share details about the success of their accomplishments to date, or to describe any frustrations they may have experienced during their research or proposal development.
3. Work with the different committees to help resolve any problems that are now or could in the future prevent them from being as productive as possible throughout the project.

HOT Activities:

1. Using their computer equipment spreadsheets, instruct the committees to begin the process of evaluating each computer to determine whether it should be replaced or upgraded. Suggest to the committees that they should choose a method for the evaluation process that allows the most input and discussion possible in a limited time. Committees might choose to divide up the list/s and to have each member make one pass at an item before discussing as a group. Or, they may choose to take all of the list/s and as a group methodically go over each computer together. Be sure to remind the committees of the requirements for providing a cost estimate based on their choice and a written rationale for each of their decisions.
2. Ask committees to consider "recycling" components/computers as they make their recommendations. (For example, in the IRCO simulation, if Accounting doesn't need the fastest CD, perhaps you replace a slow CD with a DVD unit from another department and install the slow CD in a computer for Accounting that didn't have a CD at all.)

Assessment Methods:

- Observation by instructor of group dynamics and student interaction in committees.
- Assessment by instructor of committee progress and member participation in tasks.
- Review and evaluation by instructor of written sections of proposal for each committee.
- Student assessment of committee progress and of individual contributions to accomplishments.

Instructor evaluation and comments for improvement:

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Upgrading Your Computer Equipment - Part 1

LESSON 15-4: What the World Needs Now *Approx. time: 1 class*

Lesson overview:

After completing their evaluations and recommendations for the computer equipment, there will be a list of old equipment that requires re-assignment, recycling, or disposal. It could also be that some of the parts are used to rebuild the computers that are kept. This lesson is designed for students to address the issues of computer equipment disposal not only from an economically beneficial perspective but also from an environmentally beneficial one as well.

Students will also be given an opportunity to work within their committees to refine and improve the written versions of the proposals, as well as prepare for a 10-minute oral presentation to the class during the next lesson.

Students will demonstrate the ability to:

1. Monitor and evaluate progress of each task. (F/PM, ES-15)
2. Describe how technology can adversely impact society and the environment. (T/CT)
3. Present the research results in an appropriate format and language. (F/ANL)
4. Use clear, focused, specific and grammatically correct language and terminology. (F/D&BC)
5. Respect different styles of communication and actively encourage contribution from all committee members. (F/TW, ES-11)

Prerequisites: Lessons 15-1 through 15-3

Content required:

1) Computer equipment lists with recommendations for replacement/upgrading
2) Catalog/product information on PC components
3) Draft of each section of proposals already developed by committees.
4) Research information gathered by committees.
5) Parameters for written proposal and oral presentation.

Resources:

Chapter Five: The Computer Marketplace in _Computer Concepts_, Parsons and Oja
Internet resellers of computer equipment
Computer catalogs or, if possible, a field trip to a local retail computer store

Materials checklist:

- ✓ Spreadsheet files for computer equipment that is to be replaced/upgraded

Equipment checklist:

- ✓ Computers with spreadsheet, word processing software and Internet access

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain to the students that the purpose of this lesson is to:
    - address all of the "unwanted" components or computers that will result from the recommendations to replace/upgrade made by each of the committees.
    - produce the final written proposals and prepare a short oral presentation by each committee.
2. Ask the students to identify different ways that the surplus parts could be used. Push the students to be creative as well as conscious of economic, social, and environmental considerations. Point out that there are numerous possibilities besides just throwing the parts away, such as donating to a school, selling to a surplus or used computer dealer, holding on to them for a spare-parts inventory, etc. List all of the different ideas on the board for students to refer back to as they meet in their committees.
3. Review the outline and/or guidelines for the business proposal discussed in lesson 15-1. Additional production details also may be distributed, depending on the instructor's preference (such as page limit, font style and size, spacing, use of supporting documents or research).
4. Develop and distribute a list of guidelines for the oral presentations. Keep in mind the time that is available for the committees to present and review the proposals. Also during this time, the class would be expected to identify the best proposals. For example, guidelines may include:
    - Oral presentations are limited to 10 minutes for each proposal explanation and 5 minutes for each question/answer session.
    - Visual aids or handouts describing the details of the proposal are encouraged.
    - Each member of the committee is expected to participate in the oral presentation.

Part 2 – Group Activity

5. Allow time for the committees to complete their written proposals and to prepare for their oral presentations.
6. Monitor the progress of the committees to maintain a high level of productivity among the members.

HOT Activities:

1. In their committees, instruct students to devise specific written recommendations for the disposal or recycling/re-assignment/rebuilding of all of the leftover equipment after the replacement/upgrades have been accomplished.
2. Depending of the source of computers, have individual students prepare a short paragraph describing how they could best utilize the computers if the

center received all of them. After the students have completed their paragraphs, conduct a short round-table discussion in which the students can propose their solutions.

Assessment Methods:

- Instructor observation of participation by students in group discussions and committee activities.
- Review and evaluation of the committee recommendations by the instructor.
- Students choose the best suggestions for the utilization of the computers at the center. Evaluation and feedback by instructor of students' paragraphs on content as well as grammar and punctuation.
- Observation by instructor of committees preparing for their presentations and completing proposals.

Instructor evaluation and comments for improvement:

LESSON 15-5: Money, Money, Money *Approx. time: 1 class*

Lesson overview:
Each student committee will have an opportunity to present the two proposals that have been developed. During the discussion of each of the proposals, all students should contribute to the identification of criteria to use for evaluations of the presentations. After the conclusion of the discussion, the students should be able to rate the proposals based on their evaluations

Students will demonstrate the ability to:

1. Display attitudes that foster effective communication. (F/TW, ES-10, F/D&BC)
2. Be responsive to audience and adjust communication style accordingly. (F/D&BC, ES-9)
3. Comprehend or interpret meaning when ideas are expressed from diverse perspectives. (ES-11, F/TW)
4. Explain the appropriate decision-making process when purchasing a personal computer system. (T/PC)
5. Summarize information and present in a well-organized document. (F/ANL)

Prerequisites: Lessons 15-1 through 15-4

Content required:

1) Issues in decision-making for a large computer purchase.
2) Proliferation of unwanted computer equipment:
   a) Social and economic concerns
   b) Environmental impact

Materials checklist:

✓ Transparency and handouts of Proposal Evaluation Checklist (*JMOD15-5-1*) for each student for each presentation to be evaluated

Equipment checklist:

✓ Overhead projector

Teaching strategy:

Part 1 – Pre-Class Instructor Preparation

1. Determine the order of presentations for the committee proposals and post this information for the class. You may organize the presentations by committee or prefer to present all of the proposals for full replacement, followed by all of the other proposals. Allow adequate time for discussion of questions and answers after each of the presentations, beyond the 10-minute limit if possible.

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2. Pick one member from each committee to serve on a panel for deciding which proposal is the best one for the company to take or invite other instructors, students, or administrators to participate on a panel to evaluate the presentations.

Part 2 – Presentation of Proposals

3. Have committees present each of the two proposals.
4. Lead the class in discussions of each proposal and provide time at the end of the discussion for completion of the evaluation.

HOT Activities:

1. Ask students to identify what they think would be the single most important factor affecting the decision to purchase computers other than money. As different students give their responses, use this time to compare and contrast management, social, or personal issues or perspectives. Record these ideas on the board throughout the discussion.
2. Have students choose the top-rated proposals in each category and explain the reasons for their choices.

Assessment Methods:

- Instructor evaluation of all proposals and written feedback provided to each committee.
- Evaluation by students, audience, and instructor of presentations of proposals.
- Observation and evaluation by instructor of participation in class discussions.
- Self-evaluation by each student to identify understanding of project and information learned.

Instructor evaluation and comments for improvement:

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Proposal Evaluation Checklist
Lesson 15-5

Evaluated By: ____________________

Committee Members: ____

Format

1. Written proposals meet all format guidelines ________
2. Supporting documents attached ________

Content

1. Analyses of the type and capability of the current computer equipment ________
2. Computer upgrades/equipment available on the market ________
3. Adequate computer equipment standards developed ________
4. Recommendations for replacement/upgrade of each computer at every site and estimated costs ________
5. Rationale for choices recommended ________
6. Plans for recycling, rebuilding, re-assignment, and/or disposal of the current computer equipment ________

Presentation

1. Participation by all committee members ________
2. Completion in allotted time ________
3. Effective use of visual aids or handouts ________

TOTAL ________

Module 16:

Let's Get Together: Getting Your Computer Connected

Module 16 – Let's Get Together: Getting Your Computer Connected

Learner Outcomes:

Networking Technologies

1. Explain the overall design and components of a LAN and WAN system.
2. Perform basic setup and configuration of network hardware and software.

Project Management

3. Use appropriate project management planning tools and methods.
4. Coordinate the use of resources with other team members and groups.

Testing/Validation

5. Explain and use the fundamental principles of testing methodology.
6. Effectively apply a wide range of testing methods and tools.

Analysis/Research/Documentation

7. Gather data to identify requirement; interpret and evaluate the requirements.
8. Analyze the process interactively to continuously improve the outcome.
9. Identify and use traditional and non-traditional sources of information.
10. Analyze, organize, and present research material.

Workplace Skills/Teamwork

11. Work successfully in the workplace.
12. Demonstrate leadership skills, where applicable, and show flexibility in accepting others' leadership.
13. Accept responsibility for one's own behavior and be aware of its impact on others.

Prerequisites: Modules 13, 14, and 15

Total Class Time: Approximately 30 hours

Outside readings and other resources:

Introduction to Networking, Barry Nance
The Simple Book: An Introduction to Networking Management, Marshall T. Rose
Exploring the Digital Domain: An Introduction to Computing with Multimedia and Networking, Ken Abernathy
Networking for Dummies, Doug Lowe
Small Business Networking for Dummies, Glenn Weadok
Window NT Networking for Dummies, Ed Tittel

Module 16 – Let's Get Together: Getting Your Computer Connected

Module overview:

One of the fastest growing areas in computers for job opportunities is in Networking. As businesses and organizations expand, the need for centralized information and speedy communication has become critical.

A network is defined as a collection of computers and devices connected together by communications media such as cables, telephone lines, modems, or other means. Once you connect two computers together, you have a network. As you already know, the Internet is the world's largest network. Now, many new homes are even being built with wiring for their own computer networks!

This module gives you a fascinating insight into the design and configuration of networks -- from learning about this networking stuff, to setting up your server, to connecting the different computers to each other.

For your portfolio, you will prepare:

1. A proposal for implementation of a LAN topology.
2. A list of guidelines for the establishment of user accounts.
3. A memo containing research for workstation operating system choices.
4. Recommendations and guidelines for the set-up and installation of new workstations on a network.
5. The design of a server plan.
6. The development of a policy for network back-up and logging procedures.

Lesson Titles:

- 16-1 Networking Concepts and Different Network Structures
- 16-2 Peer-to-peer and Client Servers Networks
- 16-3 Which LAN Topology?
- 16-4 Hardware Requirements for a Network Operating System
- 16-5 Installing and Configuring Network Cards
- 16-6 Installing and Configuring a Network Server
- 16-7 Managing User and Group Accounts
- 16-8 Hardware Requirements for a Workstation Operating System
- 16-9 Adding a Workstation to a Local Area Network
- 16-10 Sharing Network Resources
- 16-11 Tape Backup
- 16-12 Network Troubleshooting
- 16-13 Network Maintenance

Let's Get Together: Getting Your Computer Connected

LESSON 16-1: Networking Concepts and Different Network Structures *Approx. time: 1 class*

Lesson overview:

As students start the project, they need to know the meaning of *networking*. What can networking do for an organization? What problems will networking eliminate? What problems will networking create? What design will suit our company best and work most efficiently? Throughout this lesson, students keep a project log of information about an organization. In this log students will document the ways in which networking can help, as well as plan a networking design. Students will be expected to present their design and implementation strategy to the class for approval before proceeding. The log provides evidence and information that students will refer to as they create their presentation.

Students will demonstrate the ability to:

1. Explain networking concepts and principles. (T/NET)
2. Name and describe the functions of network hardware. (T/NET)
3. Perform the necessary steps in the design/development process. (F/D&D)
4. Work and communicate effectively in a team environment. (F/TW, ES-10)

Prerequisites: Modules 13, 14, and 15

Content required:

1) Networking definition and purposes
2) Types of Network Organization
3) Networking Components
4) Network Design
5) Cabling
6) Network Operations

Resources:

Networking for Dummies, Doug Lowe
Introduction to Networking, Barry Nance
Networking Essentials, Microsoft Press
Windows NT Resource Kit: Windows NT Networking Guide, Microsoft Press,
Windows NT Technical Support Training, Microsoft Press

Materials checklist:

- ✓ String
- ✓ Scissors
- ✓ Marker
- ✓ Index cards or paper
- ✓ Transparency and handout of Module 16 Overview (*JMOD16-Ovr*)

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- ✓ Student Handout (*JMOD16-1-1*) – How to Make Patch Cables
- ✓ Student Handout (*JMOD16-1-2*) – How To Make a Drop Box
- ✓ Student Handout (*JMOD16-1-3*) – How to Make a Punch Down

Equipment checklist:

- ✓ Computer
- ✓ CD-ROM capabilities (optional)
- ✓ Presentation device (TV, projector, etc.)
- ✓ Patch cable wire
- ✓ RJ-45s, RJ-11s
- ✓ Crimpers
- ✓ Wire Strippers
- ✓ Scissors
- ✓ LanCat or other wire testing device
- ✓ Drop box
- ✓ Inserts

Teaching strategy:

Part 1 – Class Discussion

1. Introduce the module by distributing the Overview (*JMOD16-Ovr*) and explaining the goals of the lessons.
2. *Define:* Have students, individually or as a group, define networking. Networking, at its most basic, is the concept of connecting two or more computers together for the purpose of sharing information or resources.
3. *List:* Generate/brainstorm a list of what networking allows users to do. For example, the list may include any or more of the following: share/exchange data, share/use software in different locations, share/exchange messages, share printers, fax machines, modems, etc., collect or refer to one set of information (like financial information or forms), and backup information
4. *Organize:* Sort the list into different purposes or functions. For example, the following categories are typical ways to organize tasks: data storage/access, program use, and equipment sharing.
5. *Purpose*: Generate a list with students that shows under what circumstances networking is appropriate. For example: limited equipment or resources, the need to share up-to-date information between people, and multiple work sites.

Part 2 – Individual Activity:

6. In a student log or notebook, have each student determine the technical needs of an organization by answering the following questions: What typical activities occur in the organization that require computers or related equipment (i.e. word processing, etc.)? Under which category would each of these activities fall? How would networking enhance or better serve the organization than stand-alone computers and equipment?

Part 3 – Class Activity: Making Connections

7. Since computers can be physically connected in a limited number of ways,

illustrate the simplest way to connect two computers using paper and string, a marker and white board, or two students and a ball. Demonstrate how information can now travel between the two "computers." Have the students try to communicate by passing balls between each other. The two eventually should work out a process by which the information travels in an orderly manner. Add several more "computers" to your model and illustrate what happens as more "computers" are trying to communicate on the network.

8. Introduce the term "bus topology" as a definition for the situation where all "computers" are connected to each other in a single "line".

Part 4 – Class Demonstration: Connecting to the Network

9. With your students, identify the various steps involved in connecting a computer to the network.
10. Show the students a network adapter card, a network cable, a drop box, a punch down, and a hub as a method for reinforcing terminology and concepts used throughout the lesson.
11. Depending on your emphasis in class, from this point you can also engage students in hands-on activities such as the following projects listed below. In general, the more hands-on activities that are brought into class, the more relevant and realistic the training becomes. However, relevancy and realism must be balanced with practicality. Choosing one activity among the following may add relevancy without overtaxing resources.

Part 5 – Individual and Team Activity:

12. Demonstrate how to make a network patch cable and distribute the handout (*JMOD16-1-1*) on proper steps for making a cable. Have each student make a cable according to the handout. Working in partners, each student should check their partner's work before crimping the cable. Once the cable is crimped, have each student test his or her cable for accuracy. In their log, students should generate a list of qualities to look for in a properly made cable or conversely, indicators that a cable may be potentially faulty.
13. Demonstrate how to wire a drop box and distribute the handout (*JMOD16-1-2*) on proper steps for wiring a drop box. Have each student wire the drop according to the handout. Once the drop is wired, each student can test his or her drop for a signal. In their log, students should generate a list of qualities to look for in a properly wired drop or, conversely, indicators that a drop may be wired incorrectly.
14. Demonstrate how to wire a punch down and distribute the handout (*JMOD16-1-3*) on proper steps for punching down. Have each student punch down the wiring board according to the handout. Once the student has punched down a wire on the board, each student can test his or her drop for a signal. In their log, students should generate a list of qualities to look for in a properly wired drop or, conversely, indicators that a drop may be wired incorrectly.

HOT Activities:

1. If your setting includes a LAN, take students on a network orientation tour either before or after the initial discussion on networks. Show students the computers from the outside, then take them to a wiring closet. Show them the punch downs, hubs, and related equipment. As you walk around the campus, point out cabling as it travels from one point to another. Take students to the MDF and show them the boundary router, as well as other equipment. Visit your server room and show them the different servers and their purposes as they relate to your discussion. After the visit, have students prepare a written account of what they experienced.

Assessment methods:

- Observation of students in individual and group activities.
- Assessment by instructor and student of work completed in each exercise of the handouts.
- Review and feedback by instructor of student logs.

Instructor evaluation and comments for improvement:

Student Handout
Lesson 16-1

How to Make Patch Cables

For making patch cables, you will need the following:

Wire Scissors, Wire stripper (if possible) Yard stick Crimper RJ45s

1. Measure 6 feet of wire (If asked, measure a different length) and cut it.
2. Using scissors, (or wire strippers if you have some) remove the outer cover of the wire about 2 inches on both ends of your patch cable, revealing the 8 smaller wires within. (TIP: Be careful not to nick the inner casing of the wires as this may cause crosstalk or electrical interference).
3. Arrange the wires in this order from left to right; white-blue, blue-white, white-orange, white-green, green-white, orange-white, white-brown, brown-white.
4. Cut the wires to about half an inch long, and carefully shove them into the RJ45 (GOLD WIRES FACING YOU!!).
5. Check them to see if they are in the correct order, and all the way to the top of the RJ45.
6. Double check with a friend.
7. Fit it into the crimper, and squeeze until the little latch between the handles releases. (Don't be afraid of squeezing too hard - they won't break!)

Student Handout
Lesson 16-1

How To Make A Drop Box

1. Check to see if you have all the following supplies: a drop face, drop box, screw driver, scissors, a drill and inserts.
2. Drill the drop box onto the wall.
3. Strip off about two inches of the casing off the wire.
4. Unwind the wire.
5. Take the first four wires.
6. And place them in the first insert in the slots 1, 2,3,6 in the color sequence white blue, blue white, white orange, orange white.
7. Put the plastic clasp on the insert and push down until all the wires are secure.
8. Do the same thing with the other four colors, but this time in the color sequence white green, green white, white brown, brown white.
9. Put the plastic clasp on the insert and push down until all the wires are secure.
10. Put the inserts in the face plate.
11. Wind up the wire and stick it neatly into the drop box.
12. Screw the face place onto the drop box.
13. Label the drop with the LanCat.

Student Handout
Lesson 16-1

How To Make A Punch Down

1. Check to see you have all the following tools: punch down block, cut tool, scissors, screw driver and wire.
2. Pull the wire and put it behind the punch down block.
3. Screw the punch down block onto the wall.
4. Strip the wire with the scissors.
5. Unwind the wire (only as much as necessary).
6. Look at an already made punch down and copy the color sequence onto your punch down.
7. Take the first wire and place it in the right slot.
8. Take the cut tool (make sure the word "cut" is facing downward) and insert it on the slot with the wire and then push it in, or slap on it, until the excess wire snaps off.
9. Repeat the previous step until you run out of wire or have finished copying the color sequences from the already made punch down.

LESSON 16-2: Peer-to-peer and Client Server Networks *Approx. time: 1 class*

Lesson overview:
There are two major types of networks, peer-to-peer and server-based. The type of network students decide to implement will depend on several factors, including: size of organization, level of security, type of business, level of administrative support available, amount of network traffic, needs of the users, and cost.

Students will demonstrate the ability to:
1. Determine the type of network topology needed, such as peer-to-peer and server-based. (T/NET)
2. Organize the presentation so that the material is complete, logically sequenced and meets presentation timelines. (F/D&BC)
3. Communicate effectively with audiences with various degrees of expertise. (F/D&BC)
4. Gather data to complete project. (F/RES, ES-13)

Prerequisites: Lesson 16-1

Content required:
1) Peer-to-peer networks:
    a) Size
    b) Cost
    c) Peer-to-peer operating system
    d) Implementation
    e) Where to use peer-to-peer
2) Server-based networks or Server/Client networks:
    a) Size
    b) Cost
    c) Server operating systems
    d) Implementation
    e) Where to use Server-based

Resources:
Networking Essentials, Microsoft Press

Materials checklist:
✓ Transparency and handout of IT Notes (*JMOD16-2-1*) for each student

Equipment checklist:
✓ Computer projection display

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- ✓ Overhead projector
- ✓ Computer with presentation software.
- ✓ A backup plan in case you have technical problems.

Teaching strategy:

Part 1 – Class Demonstration

1. On your demonstration computer, run the review in demo 6 from *Networking Essentials* to review basic cabling and its features. Review the three different topologies and give students a basic explanation of peer-to-peer versus client/server networking structures. For more emphasis, have students arrange themselves physically in these structures.
2. Have students review their generated list about server purposes (from the first part of the Lesson 16-1). Instruct students to review the networking requirements of the organization in the context of the peer-to-peer and client/server structures based on the needs identified in their logbook during the previous lesson.
3. As an overview, discuss some of the advantages of networking and how to physically connect computers into a network - the way the information travels along the network…how it's transferred from the computer to the network adapter card to the wire, and then how it moves across the wire. Give examples of methods using coaxial, twisted pair, fiber optic and even wireless. Provide examples wherever possible. Also, define what a network protocol is and how they are used to in the transfer of information.
4. Describe the Network operations three large categories:
    - (a) System Operation & Administration:
        - (i) Users
        - (ii) Security
        - (iii) Optimization
        - (iv) Backup
    - (b) Applications:
        - (i) Internet Services
        - (ii) Mail Services
        - (iii) Shared Applications
    - (c) Functions:
        - (i) Printing
        - (ii) File Storage
5. Ask the students to identify examples in each of these areas as they apply to their organization and discuss the implications or issues associated with each. For example, what kind of security issues are faced?
6. On your demonstration computer and projector, start lab 2 from *Networking Essentials* coursework. During this demo, have students record the process in their logbook in a systematic fashion. If the students do not have access to a computer, the instructor may review the logs for accuracy and/or ask one student to lead another student through the process on the demo computer.

7. On your demonstration computer and projector, start lab 20B from *Networking Essentials* coursework. Have students also record the process in their logbook.

Part 2 – Classroom Discussion

1. Discuss the pros and cons of both types of networks.
2. Review the network needs of their organization:
   - ❖ Size
     Number of computers
     Future growth projections
   - ❖ Cost
     Cabling needs
     Client or Server hardware and software
   - ❖ Network choice
     Peer-to-peer or Server based
   - ❖ Implementation
     - Administration
       - Central or individual
         - Security, backups, management of resources, data and users

HOT Activities:

1. Instruct students to determine which network type would meet the needs of their organization. Have the students, individually or in teams, develop a presentation supporting their network decision and present orally to the class.
2. If time permits, ask the student groups to develop a presentation using presentation software which would be appropriate for making their recommendations to the organization's management.
3. Ask students to design a scenario where a peer-to-peer network would be successful.
4. Have students research the seven-layer OSI Model and prepare a report for class. Conduct a discussion to share the findings of the students.

Assessment methods:

- Successful completion of the "Selecting a Network Architecture" checklist in the *Networking Essentials* coursework on p. 313 for one location. Appropriate networking architecture or topology determines students' answers.
- Successful participation by each student in the development of a computer presentation, supporting the correct network type for the organization's situation. Instructor and student assessment of results.
- Observation and evaluation of group activities by instructor.
- Assessment by instructor of network types chosen by students.
- Evaluation of use of presentation software for recommendations.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 16-2

Network Topologies

1) **Peer-to-peer Networks:**

   a) Size:
      i) Workgroups for a small group of people
      ii) Fewer than 10 computers

   b) Cost:
      i) Simple, and cost-efficient
      ii) No server is needed
      iii) Each client computer acts as its own server
      iv) Each computer user manages its security and administration

   c) Peer-to-peer operating system:
      i) In many of the current operating systems, the peer-to-peer software is built in at no additional cost; no expensive server software is required.

   d) Implementation:
      i) Computers are located at the users' desks
      ii) Users act as their own administrators
      iii) A simple and visible cable system is used, which connects computer to computer.
      iv) Each user backups his/her own files.

   e) Where to use peer-to-peer:
      i) Less than 10 users
      ii) All users located in the same area
      iii) Security is not an issue
      iv) Limited growth in the near future

2) **Server-Based Networks or Server/Client Networks:**

   a) Size:
      i) More than 10 users

   b) Cost:
      i) As an organization grows, servers may be added

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c) Server operating systems:
  i) A server and the software work together
  ii) Server software is expensive
  iii) Servers also add to the costs

d) Implementation:
  i) Sharing resources
  ii) Network cabling
  iii) Servers are kept in a secure room
  iv) Central file management
  v) Central security administration
  vi) User management
  vii) Backup management

e) Where to use Server-based:
  i) Networks over 10 people who need to share software, hardware and data.
  ii) Use when security is an issue
  iii) Future growth is planned

LESSON 16-3: Which LAN Topology? *Approx. time 2 classes*

Lesson overview:

This lesson is designed to teach the fundamental network topology concepts. Students will learn the characteristics of each type of topology, including the strengths and weaknesses of each. They will identify which topology works best for an organization's needs and then prepare a proposal that documents the LAN. Students can work alone or in small groups.

Students will demonstrate the ability to:

1. Present and explain the design and features of a LAN system. (T/NET)
2. Organize communication in a logical sequence, support communication with necessary data, and give and receive useful feedback. (F/D&BC)
3. Research and read technical documentation. (ES-13, F/RES)
4. Assess successful completion of each task against standards. (F/PM)
5. Follow directions and perform the necessary steps in the design process. (F/D&D, ES-4)

Prerequisites:

Lessons 16-1 and 16-2

Content required:

1) Topology
2) Cabling
3) Speed
   a) 10-base
   b) 100-base
   c) Other
4) LANs, WANs, and other configurations

Resources:

Networking Essentials, Microsoft Press,
Networking Essentials, Microsoft Press CD
http://fcit.coedu.usf.edu/network
http://www.cit.ac.nz/smac/winnt/default.htm
Search for "networking guide" on the Internet to find more resources

Materials checklist:

- ✓ Instructor prepared transparency and handout of organization's network requirements
- ✓ Sample of IRCO simulation handout (*JMOD16-3-1*) of the IRCO Network Requirements
- ✓ Computer with charting/drawing software (Visio, Harvard Graphics, Word...) to produce the network map

Equipment checklist:

- ✓ Overhead projector
- ✓ Computer w/ CD-ROM hooked up to color SVGA projector, if possible, otherwise

Teaching strategy:

Part 1 – Student Activity and Presentation

1. Information presentation. Using Microsoft *Networking Essentials* and the Web sites as sources, ask students to present information on topology, cable type, and network speed. Allow time for the students to gather the data needed or assign specific topics to individual students for the discussion. The *Networking Essentials* book is simple to understand, and the CD contains several great animations as examples of how the different network topologies work. Be sure to have the students use it if available. The above Web sites also have good information on topology, cable type, and network speed.
2. Discuss the types of networks that might be required for larger groups or multiple sites across a geographic area. Describe the differences in organization and functions among LANs, WANs, and other enterprise networks.
3. Have students note what they have learned in a journal or notebook during the discussion.
4. Ask students additional questions related to topology, cabling, speed, and advantages and disadvantages to conclude the discussion.

Part 2 - Individual or Group Activity

5. Distribute the instructor-prepared handout of network requirements for an organization that the students will use as the basis for their proposal and review with the students the requirements for the proposal.

IRCO Simulation-Optional

- Distribute the IRCO Network Requirements handout (*JMOD16-3-1)* and review with the students the requirements for the proposal.

6. Provide time for the students to decide on which network topology they will implement. *Networking Essentials* has a section on planning a network which asks a series of questions to ascertain needs, then provides the best solution.
7. Have students begin preparing an outline for their proposal.

Part 3 –Individual or Group Activity

8. Provide time in class for the students to work on the proposal.

Part 4 – Presentations and Class Discussion

9. After the proposals have been completed, conduct a discussion in which students present their proposals. Record good elements of the proposals on the board as the presentations are made.
10. Ask students to question the justifications used and consider the quality of the elements in the different recommendations as compared to their own.

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11. Have students record these good elements in their logbook at the end of the discussion or the presentations.

HOT Activity:

1. Have students set up their own network of several computers as part of this lesson. Ideally they would be able to set it up using either a star topology (using category 5 cabling and a hub) or bus topology using (cat 2/thin coax, Ts, and terminators). Many network cards have both type connectors on them.

Assessment methods:

- The proposal will be one instrument of assessment by the instructor.
- Instructor observation of participation in the group discussions and presentations.
- Self-assessment by students as to how much they have learned while preparing for the presentation of the proposal.
- Assessment by instructor of research techniques and understanding of technical documentation.

Instructor evaluation and comments for improvement:

Student Handout
Lesson 16-3

IRCO Network Requirements

IRCO's continued success has brought new growth to the company. The management has decided (finally) that the computers need to be networked. They have given you the assignment to plan and oversee this operation.

You will begin with just the administrative and accounting offices that have 7 computers but IRCO will eventually network the entire building with a total of 58 computers so keep future growth in mind as you plan.

You are expected to explore the different options in network topology, network speeds, and network cabling to determine the best configuration for IRCO. IRCO's Production Manager, Jo Santiago, is a stickler for detail and wants a proposal before any changes are implemented. This proposal must include:

- a drawing of the network (network topology map),
- the cabling type that will be used,
- the network speed they can expect, and
- the justification for the decision. This justification must include the advantages and disadvantages of this network design, how it compares with other network designs (topologies), a feature benefit/limitation analysis, and why this network design was chosen over others.

The proposal must be accurate and of professional quality. Maximum length is 5 pages. Remember, everyone is very busy at IRCO and the more concise and persuasive you can make your proposal, the better.

After the proposals have been reviewed, the best ones will be presented to the class for discussion.

LESSON 16-4: Hardware Requirements for a Network Operating System

Approx. time: 1 class

Lesson overview:

In this lesson students will work to develop a paper on the server requirements for their organization using new information on the hardware requirements that they will research on the Internet.

Students will demonstrate the ability to:

1. Determine hardware requirements for a network operating system. (T/NET)
2. Recognize the purpose of the research and evaluate its scope based on goals and available resources. (F/RES, ES-8)
3. Use effectively written and on-line sources of information. (F/RES, ES-13)
4. Organize communication in a logical sequence and support communication with necessary data. (F/D&BC)
5. Use good judgment to make timely and effective decisions. (F/D&D)

Prerequisites: Lessons 16-1, 16-2, and 16-3

Content required:

1) Operating System choice drives server requirements
2) Server Requirements
3) Parameters:
    a) Available disk space
    b) Type of processor
    c) Memory (Ram)
    d) Type of file system
4) Local and remote hosts and clients:
    a) HCL
5) Verify
6) Server and associated hardware will work with the network operating system

Resources:

Networking Essentials, Microsoft Press
www.microsoft.com
www.novell.com

Materials checklist:

- ✓ Transparency and copies of Student Handout (*JMOD16-4-1*) for each student
- ✓ Copy of a HCL
- ✓ *Networking Essentials*, Microsoft Press

Equipment checklist:

- ✓ Overhead projector
- ✓ Classroom of computers with Internet access
- ✓ A word processing program.
- ✓ Computer presentation software

Teaching strategy:

1. Distribute the handout (*JMOD16-4-1*) and discuss the content with class.
2. Instruct the students to research two different network operating systems on the Internet, such as Novell NetWare and Microsoft NT 4.0. Have the students prepare a short paper recommending which system would be better for their organization. Explain to the students that they must support their recommendation and itemize the organization's server requirements in the paper.
3. Go over the guidelines for paper:
    - ❖ Choice of a network operating system for the organization
      Research online
    - ❖ Support that choice
    - ❖ What are your server requirements for that operating system?
      Available disk space
      Type of processor
      Memory
      Type of file system
      Local and remote hosts/clients
4. List on the board some vendor Web sites that are shown under Resources.
5. Throughout the lesson, review what students should be looking for:
    - ❖ An operating system for the organization
    - ❖ Pros and Cons for the choice
    - ❖ Server requirements for the chosen OS.

HOT Activities:

1. Have students research a third network operating system to learn about its server requirements.
2. If time allows, encourage students who need to fine tune their presentation skills to use presentation software rather than a written document and proceed with an oral presentation to the class covering the same parameters.

Assessment methods:

- Evaluation of the paper by instructor. Paper includes arguments that are offered logically and competently; make sure each parameter of server hardware is detailed.
- Observation by instructor of research abilities.
- Assessment of presentations, if made, by students and instructor.
- Self-evaluation by students of progress in understanding networks.

Instructor evaluation and comments for improvement:

Student Handout
Lesson 16-4

The HCL:

Every software vendor creates a network operating system vendor's hardware compatibility list (HCL). This material is shipped with the operating system software. After determining with much research which operating system you want to use for your business, check the HCL list. The HCL is a list of computers and peripherals that have been tested and have passed compatibility testing with the product for which the HCL is being developed. For example, Windows NT 4 HCL lists the products which have been tested and found to be compatible with Windows NT 4.

There are many ways to get additional printed material about your operating system, and also online documentation with your vendor. There are resource kits available and additional files on the CD that comes with your system.

Requirements can be printed on the outside of the box that contains the software, however, you will probably want to find out those requirements prior to purchasing. Online is your best bet.

There is usually more than one system that will solve the needs of an organization. In the role of a network administrator, you will have to choose the system that you feel most comfortable working with, and that stays within your budgetary parameters.

Guidelines for Server Requirements Paper:

- Choice of a network operating system for an organization (research online).
- Support that choice.
- What are your server requirements for that operating system?
    - Available disk space
    - Type of processor
    - Memory
    - Type of file system
    - Local and remote hosts/clients

Let's Get Together: Getting Your Computer Connected

LESSON 16-5: Installing and Configuring Network Cards

Approx. time: 1 class

Lesson overview:

The network adapter card is the component in a computer that acts as the point-of-data entry and exit between the computer and the network. Computers share resources on a network with the correct network adapter card. If their organization has a network that uses network adapter cards, the students' job will be to select the appropriate one for its sites. By knowing the key features of a network adapter card, students will be able to make to best choices.

Students will demonstrate the ability to:

1. Explain the installation and configuration of the network adapter card. (T/NET)
2. Produce work that is thorough, accurate, complete, and meets the quality standards of the organization. (F/WPS)
3. Recognize and define the problem. (F/PS&T)
4. Analyze and synthesize information research information gathered. (F/ANL)
5. Use tools and equipment properly. (ES-16)

Prerequisites: Lessons 16-1, 16-2, 16-3, and 16-4

Content required:

1) Understand the role of a network adapter cards
2) Installation of a network adapter card
3) Configure options for network adapter cards.
4) Considerations for selecting a network adapter card
5) Network performance

Resources:

Networking Essentials, Microsoft Press, Second Edition
Technicians from local companies as guest speakers

Materials checklist:

- ✓ Handout of IT Notes (*JMOD16-5-1*) for each student
- ✓ Instructor prepared handout summarizing Demo 6 of *Networking Essentials*

Equipment checklist:

- ✓ Computer capable of running a CD
- ✓ Presentation station (LCD projector and computer)
- ✓ Various connectors and cable samples for students to view
- ✓ Old network adapter card to pass around and handle

Teaching strategy:

Part 1 – Class discussion

1. Distribute the IT Notes (*JMOD16-5-1*) and explain that the purpose of this lesson is to identify the best adapter card when establishing a network.
2. If possible, invite a guest speaker from a local networking installation company, or a vendor, or technician at a retail store to talk to the class about the features of the network adapter cards. Request that speakers bring product information about his/her cards for the students. Ask the speaker to demonstrate the actual installation of the card.
3. Encourage the students to ask questions which relate to the outline for the IT Notes.

Part 2 – Research and Discussion Activity

4. Have students research the Internet for vendors offering network adapter cards. Ask them to gather all of the product specifications and feature/benefit information that they can find on individual products. (You might want to assign different vendors to different groups of students for this exercise.)
5. Discuss the role of network adapter cards based on the findings of the students. Ask the students to describe any types of configuration options, such as compatibility or network performance that they might have uncovered in their research.
6. Conclude the discussion by summarizing on the board the important features to consider for an organization when choosing a network adapter card.

Part 3 – Computer Demonstration

7. Use Demo 6 from the _Network Essentials_ CD to review information on the network adapter cards. (Prepare a handout or worksheet that includes vocabulary and some questions that can be answered after viewing the demo and go over worksheet as a class and discuss content.)
8. Show students different types of connectors and cables and pass around a network adapter card.
9. Demonstrate how to install and configure network adapter cards or other types of cards. As you describe the process, also emphasize how important the configuration settings are for proper installation.

HOT Activities:

1. If available, provide students with an old computer to which warranties don't apply and let the students physically install a network card. Check the connections and cables, review different types of connectors. Use a checklist to keep track of each student's ability to install a network card correctly.

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Assessment methods:

- Instructor evaluation of quality of research and understanding of each student's ability to explain the installation and configuration process for a network adapter card.
- Observation of participation in discussions with guest speaker/s and class.
- Assessment by instructor of actual installation and configuration, if available.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 16-5

Network Adapter Cards

1) Understand the role of network adapter cards:
   a) Physical interface between computer and network
   b) Prepare data from computer for the network cable
   c) Send the data to another computer
   d) Control flow of data between computer and cabling

2) Installation of a network adapter card:
   a) Warranty restrictions
   b) Installed in an expansion slot
   c) Network cable attached to card's port

3) Configure options for network adapter cards:
   a) Interrupt Request (IRQ)
   b) Base I/0 port address
   c) Base memory address
   d) Transceiver

4) Considerations for selecting a network adapter card:
   a) Compatibility
      i) Internal structure
         (1)Data Bus Architecture
      ii) Correct cable connector for cabling

5) Network performance:
   a) Enhancements available on some cards
      i) DMA
      ii) Shared adapter memory
      iii) Shared system memory
      iv) Bus mastering
      v) RAM buffering
      vi) Onboard microprocessor

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LESSON 16-6: Installing and Configuring a Network Server

Approx. time: 1 class

Lesson overview:

In this lesson, students will set up a server and document the process, verify that everything works and get it up and running on the network. Acting in the role as network administrators, students are also responsible for maintaining documentation on each server under their care. Students will need to track serial numbers, hardware and software problems, as well as configuration and procedures they carry out on the server. For each step, have students generate a list of tasks they carry out, or information they may need to keep track of, as servers frequently need to be reconfigured and the process must be recreated exactly.

Students will demonstrate the ability to:

1. Install and configure a network server. (T/NET)
2. Produce work that is thorough, accurate, complete, and meets the quality standards of the organization. (F/WPS, ES-8)
3. Evaluate objective, alternatives, and solutions carefully before making decisions. (F/ANL)
4. Analyze relationships between parts and whole. (F/ANL)
5. Accurately and completely record information in a usable format. (F/T&V, ES-12)
6. Use and/or communicate data and conclusions to facilitate the taking of corrective steps or making needed modifications. (F/T&V, ES-9)

Prerequisites: Lessons 16-1, 16-2, 16-3, 16-4, and 16-5

Content required:.

1) Identify server components and compare to the shipping slip.
2) Document all components and identification tags.
3) Set up server and related hardware such as a hub.
4) Document any discrepancies or missing items.
5) Install network operating system and related services.
6) Check/verify each function.
7) Connect to the LAN.

Instructor's Note: Essentially you have three methods of approaching this lesson:

1. You can talk about the theory with the students. Discussing the basic process and test students' abilities to describe the process.

2. You can use simulations and labs in the Microsoft Press *Windows NT Technical Support Training* and *Networking Essentials* modules to simulate setting up a server. This could be done on one computer for the whole class or

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set up on individual computers for each student.
3. You can have students set up a computer as a server and configure it, following the installation procedure included with this lesson. (Optional handouts are also provided (*JMOD16-6-2* and *JMOD16-6-3*) to assist in the process.)

The second half of the lesson involves the installation of networking software on your computer, as well as configuring the various services. At this point, there are several choices to be made as to how you proceed, based on your resources and situation. How you proceed and the details depend on which operating system you choose. For example, a simulation can be used in a lab of computers or on a single computer that is then projected on a screen. In all cases, the best option is to have students actually install real network operating systems and to set up a real server. Included below is a typical server installation procedure used by the Issaquah School District as a generic procedure to follow for setting up servers. For purposes of this lesson, students will be running Lab 15 of the Microsoft *Networking Essentials* coursework.

Resources:

Networking Essentials, Microsoft Press
Windows NT Technical Support Training, Microsoft Press
Microsoft Technical Support

Materials checklist:

- ✓ Step-by-Step handout (*JMOD16-6-1*) for each student
- ✓ Log or notebook and writing utensil (Optional: students could keep a log on the computer)
- ✓ Precision screwdrivers
- ✓ Network operating software

Equipment checklist:

- ✓ *For Instructor*
  - ➢ PC with a minimum of 32 MB Ram, 1 gigabyte hard drive and CD-ROM drive.
  - ➢ Presentation device (TV, projector, etc.)
- ✓ *For each student or students working in pairs:*
  - ➢ PC with a minimum of 32 MB Ram, 1 gigabyte hard drive and CD-ROM drive.
  - ➢ Appropriate hardware components (as decided by instructor)
  - ➢ Optional components: UPS, backup tape drive, external drive bay, etc.
  - ➢ Windows 95, 98 or Windows NT Workstation
  - ➢ Windows NT Server 4.0

Teaching strategy:

Part 1 - Assess, Document, Test

Class Discussion--Overview

1. Explain to the students the purpose of the lesson, as follows: Today we will

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be setting up and configuring our new servers. Your first step will be to assess what you have received and to determine that all of the components are present and accounted for. Your next step will be to connect the appropriate hardware and to install the operating system. Afterwards, you will configure your system according to the recommended installation procedure guide provided by our vendor, who has been assisting in the project design. The final step is to verify that all hardware and software components are functioning within specifications.

2. Distribute the Step-by-Step handout (*JMOD16-6-1*) and have the students begin working in groups to accomplish each of the tasks in Part 1, only.
3. Discuss a real-world application with the students after they finish the tasks: Who would receive the inventory or serial number information? What do you do if something is missing? Design an action plan that would demonstrate your knowledge of how to proceed when one or more parts of the order are missing or incorrect. If you are unable to identify something, how can you determine its purpose?

Part 2 - Apply/Connect, Verify/Test, Log, Communicate
Class Discussion--overview

4. Introduce this part of the lesson with the following explanation: Next, we will begin the physical set-up of the server and continue on to the initial software configuration.
5. Have students begin working on Part 2 of the handout.
6. Discuss a real-world application with the students after they have completed the tasks in Part 2: What do you do if something is not functioning correctly? How do you determine whether the problem is an equipment malfunction rather than user error (i.e. you doing the wrong thing)? Assuming the equipment is malfunctioning, what would then be the proper procedure for resolving this problem?

Part 3 – Install, Verify, Log, Communicate
Class Discussion: General Overview

7. Explain the following to the students: After having set up, tested, and documented each hardware component, we will now install the network operating software. Discuss the fact that Windows NT is being used as the example, but there are other operating systems. If time permits, have students conduct additional research on No[illegible]ll or UNIX.
8. At this point, the class will differ, based on your individual resources. *Recommendation:* Run one of the simulations listed below for the class as a whole on a presentation machine and then assign students in teams to individual servers for a real-time installation.

Team or Individual Activity:

9. Have students run Lab 15 of the Microsoft Press, Networking Essentials coursework. Instruct them to continue documenting each step of the process in their lab book so that they could recreate the same server from the ground

up. Follow the instructions for the simulation.

10. Microsoft Press *Windows NT Technical Support Training* module offers a more in-depth simulation of an NT server installation. This could be done on one computer for the whole class or set up on individual computers for each student. In this course, students create server setup disks, install the server software and configure the server to a network.
11. Students should set up a computer as a server and configure it, following the installation procedure included with this lesson.

HOT Activities:

1. Make sure that students have a log documenting each procedure and indicating any difficulties they had with the process. The log also will include an itemized listing of each hardware and software component and a verification that each component works. Lastly, the log should include student responses to real-world application questions. In addition, in the best case, students should have a computer that has been configured as a server.

Assessment methods:

- Evaluation by instructor of students' logs for elements of accuracy and completeness.
- Observation by instructor of student participation in group and individual activities and class discussions.

Instructor evaluation and comments for improvement:

STEP-BY-STEP Handout
Lesson 16-6

Part 1

1. Locate the packing slip or materials list that arrived with your server.
2. On the packing slip, decide what pieces you can "see" and easily identify. For example, you can count how many hard drives are present but may not be able to ascertain if the vendor did, in fact, provide a "narrow connector for the first 5 externally accessible bays."
3. Locate and identify each piece of hardware and software that was ordered. In your log, create a sheet to record inventory information. On your inventory sheet, verify that each component and related software is present. Indicate any discrepancies or differences. Remember to record any serial numbers or inventory tags for each component for warranty information.

Part 2

1. Hook up and plug in the computer system and its peripherals. This will vary, based on the system you are provided but the general procedure is documented below. In general, each step should be written down in your log and verified. So our process is to plug in the basic components, turn on the computer and verify that the specific hardware component functions; check it off on your log sheet, then proceed to the next step. At this time, you are focusing on the hardware rather than the software of each component piece. For example, verify that the backup tape drive inserts and ejects tapes not whether it backs up data.

Step One – Preparation

2. Based on the Materials List in your log, determine which hardware components can and must be verified. Predict ways in which you can test each component or gather the necessary information to determine it is functioning within specifications.

Step Two-Testing

3. Plug in the monitor, keyboard and mouse to the case. Plug the monitor and the case into an electrical outlet. Verify that each of these components work sand log result. Power down the system.
4. Verify the floppy drive works. Log result. Verify the CD-ROM drive works. Log result. Power down the system.
5. If there is a backup power supply (UPS), plug the computer and monitor into the UPS (according to the manufacturer's instructions). Power up the system and verify that each hardware component works. Log your result. Power down the system.
6. If there is an external drive bay or CD-ROM tower, plug this in to the appropriate serial port (according to the manufacturer's instructions). Power up the system and verify that each hardware component works. Log your result. Power down the system.

7. If there is a backup tape unit, plug this in to the appropriate port (according to the manufacturer's instructions). Power up the system and verify that each hardware component works. Log your result. Power down the system.
8. Continue this procedure for any other components.

A note on testing and support:
Two actions on your part as network administrator will assure effective and complete technical support: 1. Log each of your actions so that you can answer technical questions about problems that may occur. 2. Register all software and hardware components in the event that you may need to take advantage of any warranty or service agreements. Each of these actions will save time and money in the event of a catastrophic event.

Sample Packing Slip/Materials List

Qty.	Component	Present	Working
1	Multiprocessor Server		
	Full-size tower case, 300W, 8 1/2 ht. Bays (6 ext, 2 int)		
1	12 Bay Secure Tower case, locking, 400W, 3 fans		
1	Two-cable set for lg-bay case, provides Wide connector at all		
1	2 bays, narrow connector for first 5 externally accessible bays		
1	3.5" drib: adapters for lg-bay case (pre-mounted in all bays)		
	ASUS P/I 65 UP5 dual Pentium/Pentium Pro motherboard		
	ASUS C-P55T2D dual Pentium daughterboard		
	512K PBM cache		
	2 (two) Intel P133 CPU, ball bearing heat sink / cooling fan		
1	2 (two) Intel PI66MMX CPU, BB heat sink / cooling fan		
	64M8 EDO RAM		
1	Upgrade RAM to 128MB EDO		
	Fujitsu 3.5.' floppy drive		
	Toshiba 5701 12X SCSI CD ROM drive		
	Adaptec 2940U Bus-mastering PCI Ultra SCSI controller		
	(2) Seagate 52160N Ultra Narrow SCS! 2.16G for boot/mirror		
1	Upgrade to Adaptec 7940UW Wide Ultra SCSI controller		
1	Add an Adaptec 1520 SCSI 2 Narrow controller		
6	Add a Seagate 19171W b.1G Ultra Wide SCSI HDD*		
	* these upgrades / add-ons require a wide controller upgrade		
	Seagate STDZ4OOON 2-4G SCSI int. DAT drive w/10 90M tapes		
1	(remove 2-4G SCSI tape backup and tapes)		
1	Add a Seagate 4586XP ext. DAT autoloader, 12 cassette magazine		
10	120M DDSZ 4-8G tapes for 4326RP or 4586XP, each		
1	Add a 6' external 50HD-to-50 Centronics cable for autoloader		
1	Add Arcada Backup Exec for NT Enterprise Edition v6.11		
1	Add Arcada Backup Exec for NT Autoloader Module v6.11		
	3COM 3C90577 10/100Mb Ethernet, 10BaseT		
	Touch TD1436A 14" SVGA moniker		
	BTC keyboard		
1	upgrade: Maxiswitch 104 windows 95 keyboard Mouse with pad		
1	upgrade: Microsoft PS/2 Mouse with Pad		
	Tripplite Omnismart IOSOVA UPS w/interface and sftwr.		
1	Remove Omnismart IOSOVA UPS w/interface and sir.		
1	Add an APC Smart-UPS 1400 Net, w/ interface and sftwr.		
1	Win NT 4.0 Svr Lic		
1	BackupExec License		
1	Backup Exec Stacker License		
1	Backup Exec Enterprise License		

IT Notes
Lesson 16-6

Installing Windows NT Server 4.0

1. Break mirror on C: -- Start→Program→Administrative Tools→Disk Adminstrator
2. Highlight c: -- Choose Fault Tolerance→Break Mirror→Yes→Yes→Exit→Okay to System Restart
3. Make a network boot disk
4. Open a DOS Prompt
5. Type *Format a: /s*
6. Copy fdisk.exe and format.com to this floppy
7. On an existing NT Server, -- Start→Program→Administrative Tools→Network Client Administrator
8. Make a Network Installation Disk
9. Use Existing Shared Directory: \\source\clients *** (see instructor for location of files)
10. For Network Client, select Windows for Workgroups
11. For Network Adapter Card, select the appropriate adapter (listed on your inventory sheet). If you card does not appear on the installation list, refer to Technet Article #Q128800 "How to Provide Additional NDIS2 Drivers for Network Client 3.0.
12. For Network Protocol choose NetBEUI protocol
13. Using your boot disk, restart the (new) server
14. At the command prompt, type *LOCK* and press enter, yes to confirm
15. Run *FDISK*
16. Delete all partitions
17. Recreate one 500 MB partition on the first hard drive, C:
18. Mark this partition as active.
19. Connect to the District Product Share: "*NET USE X: \\SOURCE\INSTALL*" ***(See instructors for location of files)
20. *FORMAT C: /S*
21. If you wish, name the hard drive an appropriate name (such as boot drive)
22. Start NT Server Setup: *X:SYS\WINNT40.SRV\I386\WINNT.EXE /B*
23. If asked for a path where the Windows NT files are located, enter the following path: x:\sys\winnt40.srv\I386
24. Files will be copied. Reboot when prompted to do so.
25. Note: If the system hangs on the reboot with the message "Press any key to reboot" it may have lost the C: as the active partition. Reboot again with your DOS boot disk. Run FDISK and reset the C: drive to be the active partition.
26. NT Setup will recognize the Adaptec Controllers. Press Enter to continue
27. Accept the NT License Agreement (page down, F8)
28. Accept Hardware/Software list (Enter)

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29. Create partitions--The C: partition will be highlighted. Press Enter to install NT on this partition. Leave the current file system as FIXED and FAT
30. Accept default installation directory of WINNT
31. Press Escape to skip the exhaustive drive examination.
32. Remove the floppy and press enter when prompted.
33. Enter Name and Organization (e.g. Suzy Smith, International Recording Company)
34. Licensing Mode--select Per Seat
35. Select Server Name (For ex: IRCOSVR)
36. Select Server Role: Primary Domain Controller (1st server in the domain) / Backup Domain Controller (2nd server in the domain) / Addition Server (in a domain that already has a PDC and a BDC)
37. Enter Administrator Account Password (WRITE IT DOWN NOW)
38. Create an Emergency Repair Disk as prompted.
39. Accept NT Option Default
40. Accept Network Options
41. Accept Install Microsoft Internet Information Server
42. Start Search for Network Adapter
43. Choose appropriate adapter (For. Ex. 3Com Etherlink XL Adapter/3C905)
44. Select Network Protocols: TCP/IP and NetBEUI, deselect NWLink IPX/SPC Compatible Transport.
45. Accept list of Network Services.
46. If you are prompted to use DHCP, answer No.
47. Specify an appropriate IP Address (see instructor for details)
    164.116.XXX.YYY--XXX=location's subnet; YYY=unique IP Address
    Subnet mask: 255.255.255.0
    Default Gateway: router address
48. Click on DNS. Add domain name, add IP address. Click NEXT
49. Accept bindings for all services
50. Select the Domain and enter your location's domain name (see instructor)
51. Create a computer account in your domain. (You will be prompted to enter an Administrative account and password to complete this process).
52. Internet Information Server 2.0 Setup is next
53. Select Internet Service Manager
54. World Wide Web Service
55. Internet Service Manager (HTML)
56. ODBC Drivers and Administration.
57. Accept default WWW Publishing directory of C:\InetPub\wwwroot (this may be changed later).\
58. Accept default ODBC driver to install (SQL Server).
59. Accept & indicate appropriate date, time, video card.
60. Reboot and log on with the Administrator account you created. (Make sure to write down the account name and password)
61. Create partitions--Start Disk Administrator
62. If you are prompted to write a signature on the Disk, answer yes.

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63. To create a mirror set: Click on c: partition, disk 0. Control-Click on Disk 1. Select Fault Tolerance→Establish Mirror.
64. To create a stripe set with parity: Click on the 1st drive's free space in the desired stripe set. Control-click on each remaining drive. Select Fault Tolerance→Create stripe set with parity. Select size according to your chart.
65. You may have to select File→Commit Changes Now & Reboot to finish creating the stripe sets.
66. Assign drive letters and format all partitions as NTFS (other than your boot drive).
67. Install DLC protocol
68. Install Services for Macintosh
69. Install DHCP Server but do not configure until you are prepared to set up a DHCP scope excluding any existing IP addresses.
70. Move the IISRoot Directory to D: drive
71. Create an Emergency Repair disk: Start→Run→*RDISK* (follow prompts)
72. Save Disk Configuration to floppy disk: Start→Programs→Disk Administrator→Partition→Configuration→Save
73. Install latest service pack and any appropriate hot fixes (see instructor for details).

Let's Get Together: Getting Your Computer Connected

LESSON 16-7: Managing User and Group Accounts *Approx. time: 1 class*

Lesson overview:

There must always be someone in charge of managing the network of an organization. User administration is part of that management; it includes adding and removing user accounts. New accounts must be created for new users and those users in turn need to be added to groups with different access privileges. Removal of users upon departure from the organization is important. You no longer want them to have access to the information, so you must take away their access privileges. This lesson focuses on the creation of accounts by students and the entry of necessary data to access the network.

Students will demonstrate the ability to:

1. Input and manage user and group accounts. (T/NET)
2. Explain the importance of project documentation during the design process. (F/D&D)
3. Explain security issues and user/access privileges in a business context as well as the flow of information between different business areas. (T/NET)
4. Relate an organization's goals to network management. (T/NET)

Prerequisites: Lessons 16-1 through 16-6

Content required:

1) Creating User Accounts:
    a) Entering User Information
    b) Setting Parameters
    c) Passwords
2) Group Accounts:
    a) Planning
    b) Creating Groups
    c) Group Privileges
3) Disabling and Deleting User Account

Resources:

Networking Essentials, Microsoft Press

Materials checklist:

✓ *Networking Essentials* CD

Equipment checklist:

✓ Computer able to run a CD

Teaching strategy:

Part 1 – Class Discussion

1. Explain the purpose of the lesson by conducting a discussion on user administration at an organization. Ask the students to identify reasons for having user and group accounts as an important function in managing a network. Have the students consider the security issues faced by a corporation and how these concerns would affect user access/privileges. During the discussion, emphasize:
   - ❖ The purpose and reasons for managing users on a network
   - ❖ How User Accounts are created
2. Walk students through the design of a form with pertinent information on it so that they would be prepared to enter an account for a user. List the elements of the form on the board for display throughout the discussion. Invite students to contribute elements and to explain their importance for inclusion. Examples of elements for a form would be:
   - ❖ User Name
   - ❖ Password
   - ❖ Parameters (for example – dept., title, region)
   - ❖ Group Accounts
     Planning
     Group Concept
     An account that contains other accounts
     Ease of administration
     Types
     Creating
     Group Privileges
     Users with similar permissions grouped together
   - ❖ Deleting or Disabling User Accounts
     Deleting
     Erases user's information
     Disabling User Account
     Account information still on server, but user is unable to access
3. After a form has been designed, ask students to fill in the user account data that they would enter in each category of the form now on the board.

Part 2 – Hands-on Computer Activity

4. Have students complete Lab 20A on the *Networking Essentials* CD.
5. After each student is comfortable doing the simulation, have him/her create his/her own user account on the server, using the privileges set forth by the teacher.

HOT Activity:

1. Instruct students to form teams and to develop a list of guidelines for user-access for the new network at an organization. Based on different groups within the organization, have students use the guidelines to determine what

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type of access that would be needed by users in each group, and prepare a written summary.

2. Provide discussion time for each team to share the guidelines that were developed with members of other teams. Have students compare and contrast the differences among the guidelines. Also, ask students to consider the importance of proper documentation and its usefulness.
3. Instruct students to develop a diagram on a poster of: 1) what types of information exist in their sample organization; 2) who within the organization should have access to the information; 3) and to what degree that access should be limited.

Assessment methods:

- Instructor evaluation of the ability of the students to create and delete accounts as simulated in the demo.
- Assessment of guidelines prepared by students and feedback provided by students and instructor.
- Observation of participation by students in groups and class discussion.
- Evaluation by instructor and students of posters relating information flow and access.

Instructor evaluation and comments for improvement:

LESSON 16-8: Hardware Requirements For a Workstation Operating System *Approx. time: 1 class*

Lesson overview:

Choosing a workstation is an important task for the network administrator. An administrator always wants to work toward a standard system. Since the workstation software will also be driven by the network operating system, the two must be compatible. In this lesson, students will explore workstation options by researching different vendor sites for equipment.

Students will demonstrate the ability to:

1. Explain considerations for connecting a basic workstation to a network. (T/NET)
2. Use effectively oral, written and on-line sources of information. (F/RES)
3. Organize communication in a logical sequence and support communication with necessary data. (F/D&BC)
4. Evaluate objectives, alternatives, and solutions carefully before making decisions. (F/D&D)
5. Read and interpret technical documentation and specifications. (ES-7, F/ANL)
6. Develop recommendations with valid and relevant supporting data. (F/ANL)

Prerequisites: Lessons 16-1 through 16-7

Content required:

1) Workstation operating system
2) Operating System Hardware Requirements
3) Parameters:
   a) Available disk space
   b) Type of Processor
   c) Memory (Ram)
   d) Type of file system
   e) Required additional drives
4) HCL:
   a) Verify Workstation and associated hardware will work with the network operating system

Resources:

www.microsoft.com
www.novell.com

Materials checklist:

- ✓ HCL manual
- ✓ A few operating system basic manuals, if available

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Equipment checklist:

- ✓ Classroom of computers with Internet access
- ✓ A word processing program
- ✓ Computer presentation software

Teaching strategy:

Part 1 – Introductory Discussion

1. Describe the goal of this lesson and begin a discussion of the requirements for workstations on a network with the class. Ask students to suggest what they think would be an important consideration in choosing a workstation (which would be similar to choosing a computer). Emphasize at least the following points:
   - ❖ Workstation Requirements to run an operating system
     Available disk space
     Type of processor
     Memory
     Type of file system
   - ❖ HCL
2. Point out the compatibility issues between your server software and your workstation software.

Part 2 – Research Activity

3. Have students research two different network operating systems on the Internet, such as Windows 95 and Windows NT 4.0, and prepare a one-page typed report addressing which workstation system students would recommend for their sample organization. The paper should also include what kind of hardware would be required and discuss the pros and cons of the recommended choice.
4. Go over any additional requirements for paper:
   Choice of a workstation operating system
      - ❖ Research online
   What are the workstation hardware requirements?
      - ❖ Available disk space
      - ❖ Type of processor
      - ❖ Memory
      - ❖ Type of file system
5. List on the board some vendor Internet sites, mentioned under Resources. As students discover additional sites, be sure to have them add the sites to the whiteboard list.

HOT Activity:

1. After all of the reports have been reviewed by the instructor, set up a panel of students who prepared the five best recommendations. Have the rest of the class pose as evaluators and weigh the considerations of each of the recommendations after short presentations by the panelists. Ask the class to

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discuss the pros and cons offered by each report. Conclude by having the class vote on which paper offers the best solution.

Assessment methods:

- Observation of students conducting research during the class and participating in the class discussions.
- Instructor assessment and feedback on report written by students. Students preparing best examples chosen to participate in panel discussion.
- Instructor evaluation of student report on organization and support of data.
- Students assess quality of recommendations made during panel discussion.

Instructor evaluation and comments for improvement:

LESSON 16-9: Adding a Workstation to a Local Area Network (LAN) *Approx. time: 1 class*

Lesson overview:

Using the situation of an organization with an established LAN, the students will add a new employee workstation to the network. They will also have to address such questions as: "What are the components they will have to gather on a cart before leaving the work area?" This lesson does not present any new information, but will require students to show their ability to apply the concepts discussed previously, organizational skills and ability to apply knowledge.

Students will demonstrate the ability to:

1. Set up and configure a basic workstation connected to the network. (T/NET)
2. Involve others in cooperative team efforts and consider their ideas. (F/TW, ES-10)
3. Accept responsibility for one's own behavior and evaluate its impact on others. (F/TW)
4. Assign adequate resources to completion of task. (F/PM)
5. Create a sequential outline or flowchart, including timelines for the process. (F/PM)
6. Evaluate fairly others' ideas when they are in conflict with one's own. (F/TW, ES-11)

Prerequisites: Lessons 16-1 through 16-8

Content required:

1) Setting up a workstation
   a) Organized:
      i) What is needed
   b) Unobtrusive:
      i) Don't interfere with the working environment of others
   c) Quick and efficient:
      i) Test computer before you leave

Materials checklist:

✓ Copies of template checklist that students create

Equipment checklist:

✓ Computer, cables, network card
✓ Whiteboard
✓ Copier

Teaching strategy:

Part 1 – Class discussion

1. Begin the lesson by explaining that the purpose of this lesson is to develop a template checklist that can be used for adding a workstation to a LAN as well as a timeline for installation.
2. Guide the class through a discussion of what items must be considered in the planning stage, installation stage, and after completion. Record their ideas on a whiteboard.
3. Help the students fine tune the checklist of materials to take to the installation. Some items to remember:
   - computer configured as a workstation,
   - network adapter card and memory installed and system, and
   - all appropriate cables and connectors.
   - User name and other important information such as inventory and history that can be incorporated on the checklist and used also as a log sheet.
4. Remind the students that the installer wants to do as much of the work in the office or workroom as possible, so that when he/she arrives at the workstation site, all that is left is plugging in the cables, powering up and testing.
5. Also point out that it is best to test in the workroom before you move the hardware, and to test again after hardware is set up at the site.
6. Walk the students through setting up a time-line for the actual installation. Encourage them to think of the customer and all the activities happening in the office that they have to consider and incorporate into the time line. For example, scheduling disruption for after-work hours makes the most sense. Also, include such events as meeting with the customer/client to determine his/her needs and training the users, as well as allowing for the actual time to install.

Part 2 – On-site visit (Optional)

7. Identify a local site that students could visit which includes a repair facility for network terminals, or a company which includes network installation as one of their services. Remember also that some centers have networks in the administrative offices and someone maintains those. This could be another convenient site and source of outside expertise for the students to visit.
8. If possible, require students to visit a retail computer store and interview a sales representative about choices for network products. Have students prepare a short written description of the visit and the information obtained.

HOT Activities:

1. Break the class into teams and have students participate in the preparation of a new workstation for a department in an organization, using the new checklist. Assign each team to be either the network installation crew or the members of the department. Instruct team members who represent the department's employees to role-play the parts as realistically as possible and have the installation teams start by developing the time line and following through each step of the process.

2. Upon completion of the simulated installation, have students prepare a short written summary evaluating the steps in the process and including any changes that would have improved the process. If time permits, allow students to present these changes to the class in a formal discussion to follow up the installation.
3. Ask students to develop a written set of recommendations and guidelines for an organization to use in the set up and installation of new workstations based on their experiences.

Assessment methods:

- Observation by instructor of teams role-playing parts effectively.
- Assessment and feedback provided for written evaluations by students.
- Evaluation of recommendations and guidelines developed by students.
- Self-assessment by students of success of installation process.
- Instructor assessment of participation in on-site visit opportunities, if available.

Instructor evaluation and comments for improvement:

LESSON 16-10: Sharing Network Resources *Approx. time: 2 classes*

Lesson overview:

As the network administrator, you constantly seek ways to make the system more efficient and to show your users how to use the resources that the network provides. Instead of having to buy printers for everyone or spend extra money on peripherals at every location, you realize that the network can help stretch those existing resources further. One of the fantastic aspects of networking is how it lets you centralize and share resources to a large group of people. From one location, you can provide specific users, or all users, access to printers, CD-ROMs, hard drives, and more. In this lesson, you will get to practice how to share a variety of resources on a network. Keep a log of each step you perform so that you could repeat the task. In addition, as a network administrator, it is important to keep a record of each action performed on the server to track problems or to recreate directory structures in the event of a catastrophe.

Students will demonstrate the ability to:

1. Evaluate objective, alternatives, and solutions carefully before making decisions. (F/ANL)
2. Use good judgement to make timely and effective decisions. (F/ANL)
3. Explain the importance of project documentation during the installation process. (F/PM)
4. Work effectively within the system and with members of the team and organization. (F/WPS, F/TW, ES-10)
5. Give examples of, and compare, different testing procedures. (F/T&V)
6. Accurately and completely record all feedback in a usable format, without editing or bias. (F/T&V)
7. Use and/or communicate data and conclusions to facilitate the taking of corrective steps or making needed modifications. (F/T&V)

Prerequisites: Lessons 16-1 through 16-9

Content required:

Instructor's Note: The labs and explanations of networking in this module are based on Windows NT concepts and structure. Similar concepts and skills are required for working on other networking systems. While these sample labs are based on NT, they can also be applied for other networking operating systems where step-by-step instructions would need to be altered for the particular situation.

1) Server:

    a) Sharing Directories
    b) Sharing CD-ROMS
    c) Sharing Printers
2) Workstation:
    a) Connecting to Directories
    b) Connecting to CD-ROMS
3) Connecting to Printers

Resources:

Networking for Dummies, Doug Lowe
Introduction to Networking, Barry Nance
Networking Essentials, Microsoft Press
Windows NT Resource Kit: Windows NT Networking Guide, Microsoft Press
Windows NT Technical Support Training, Microsoft Press

Materials checklist:

Handout of IT Notes (*JMOD16-10-1*) for each student
Step-by-Step handout (*JMOD16-10-2*) for each student
Handout of Action Log (*JMOD16-10-3*) for each student

Equipment checklist:

- ✓ Computer
- ✓ CD-ROM capabilities (optional)
- ✓ Presentation device (TV, projector, etc.)

Optional:

- ✓ Student workstations running Windows NT 4.0
- ✓ Networkable printer

Teaching strategy:

Part 1 - Class Discussion and Student Practice

1. Explain the purpose of the lesson and start by distributing both the IT Notes (*JMOD16-10-1*) and the Step-by-Step (*JMOD16-10-2*) handouts to all of the students.
2. Provide some time for the students to review the information in each of the four parts of the IT Notes.
3. Discuss each of the parts in the IT Notes individually and then have students practice, using the instructions on the Step-by-Step handout that corresponds to the topic. As students complete each of the practice exercises, discuss their results before continuing to the next topic.
4. Continue the discussion further by asking the students to consider the pros and cons of sharing resources on a network in an organizaiton. What would be best shared and what would be best not to share?
5. Distribute the Action Log (*JMOD16-16-3)* and conclude the discussion by asking the students to brainstorm about the importance of keeping such documentation.

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HOT Activities:

1. Have students design a basic file structure for their sample organization allowing for the following needs: individual file storage location for employees, large client/server applications, common data for all users. Instruct them to sketch what this directory structure would look like.
2. Have the students choose a partner and assign one partner to perform a routine at a server, which includes the following tasks: sharing a directory; stop sharing a directory; sharing a CD-ROM drive; stop sharing a CD-ROM drive; installing and configuring a printer. The other partner is responsible for verifying that the correct actions were taken throughout the routine. Instruct the partners to then switch roles and repeat the routine.
3. Have the students choose a partner and assign one partner to perform a routine at a workstation, which includes the following tasks: browsing the network and listing the shared resources available on the network; connecting to a file directory; connecting to a CD-ROM; adding a network printer; printing a test page. The other partner is responsible for verifying that the correct actions were taken throughout the routine. Instruct the partners to then switch roles and repeat the routine.
4. Ask students to design a server plan for their sample organization that establishes shared data files, individual user directories, shared applications, and CD-ROMS. Have students address each of the topics in their plan:
   - ☐ Structure of the different directories and rationale.
   - ☐ Choice of logical share names for each sub-directory, with explanation
   - ☐ Users and groups that should have access to different directories, with explanation.
   - ☐ Long-term maintenance requirements to ensure that these directories are maintained and functioning
   - ☐ Significance of the action log
   - ☐ Verification that each of the following resources are shared correctly for different user groups: Directory, CD-ROM, Printer.

Assessment methods:

- Observation and assessment by instructor of student participation in discussions, team activities, and computer practice.
- Evaluation and written feedback provided for server plan for their organization.
- Student assessment of their own progress and ability to complete routines on server and workstations.
- Assessment of the file structure developed for their organization by students.

Instructor evaluation and comments for improvement:

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IT NOTES
Lesson 16-10

Part 1 - File Storage & Organization

One of the main reasons for using a client/server network is to provide file storage for users, i.e., give them a central place to store their "stuff". When setting up a server, one generally designates one portion of the drive space for the server operating system and the rest for storage. Of the portion designated for file storage, one must decide on an organization structure.

Files generally are organized in one directory, called Shares. This indicates that all the directories listed under "Shares" are intended to be accessible on the network by users. Further divisions may be made for Macintosh or PC programs, user files storage (often called home directories), or individual programs. The administrator can later designate who has access to the directory: from only administrators to a particular user; to everyone; or to a group of people.

Part 2 - File Security

Immediately upon creating a network share, one pressing question should nag at the back of your mind: Who should be allowed access to this share? In File Manager, explore the menu item, Security. Under Security, an administrator can take "ownership" of a directory, view and change "permissions" and generally control the world:

- Where Domain Administrators (network administrators who can access any server) can see, change, or delete any file and generally do anything they want.
- Where Administrators (network administrators of only this server) can see, change, or delete any file and generally do anything they want.
- Where Domain Users (everyone with accounts on the network) can view and execute any file but can't modify or delete them. This is advisable if you have programs installed in a directory but you don't want some hapless user to accidentally erase something important.

A typical permission structure for a directory for user file storage is the place:

- Where Domain Administrators (network administrators who can access any server) can see, change, or delete any file and generally do anything they want.
- Where Administrators (network administrators of only this server) can see, change, or delete any file and generally do anything they want.
- Where an INDIVIDUAL ACCOUNT (one person) can view and execute, change, or delete any file but can't accidentally change the user folder name or change the ownership of a file. This is advisable for individual file storage

so that you can keep them well organized and uniform and can backup data but users can add and delete files at their whim.

Other possibilities:
Setting up a directory so that a limited number of people can add or change files and a different group of people only can view them. This is useful for financial or statistical data that a few people create but that many people need to see.

Part 3 - Sharing CD-ROMS

In general, sharing file directories and CD-ROMs is virtually the same process with one or two notable exceptions. A CD-ROM must be inserted in the drive in order to be shared. One cannot change permissions on a CD-ROM Drive.

General Process

Insert CD-ROM in drive
Select CD-ROM drive in File Manager
Under DISK, choose SHARING.
Give the CD-ROM drive a Share name.

Part 4 - Sharing Printers

Sharing and managing printers over a network can be quite simple in concept but tricky in the real world. Essentially, to share a printer one can either share a printer from a workstation on a network or share it directly over the network. By sharing a printer directly over a network, the server, and then the printer itself manages the print jobs. This allows multiple users to print directly to a single printer. Printing is usually more efficient and users are able to continue working on their workstations without waiting for a print job to complete. On the downside, if the server is down or a portion of the network connecting the printer is malfunctioning, then printing cannot occur. Distance also affects network printers. In some cases, network printer cards need to be "refreshed". Insufficient printer memory can also be a problem. In all cases, buying a higher cost networkable printer with sufficient memory can be a cost-saver and cause far fewer problems that trying to network a lower-priced printer that was not constructed for the purpose of networking.

General Process

Connect the printer to the network (usually directly connected with a network cable)
At the server, under printers→Choose Add a Printer.
Follow the prompts.
Name the printer. (Note: Printers are often named as either the printer model or by location such as "staff-room")

Part 5 - Connecting to Shared Resources

The first step to sharing resources such as printers and directories across a network is to set up each resource from the server or workstation. At this point, students should have three different types of resources accessible on their network from either their workstations or the server: a printer, a file directory, and a CD-ROM. In order to access these resources from the individual workstations on the network, students must learn to connect to these network-wide resources. In addition, in some cases, drivers or set-up files must be installed in order to utilize the resources.

Connecting to Directories & CD-ROMS

The process for connecting to directories and CD-ROMs varies, based on the operating system of the workstations. Once a CD-ROM or directory has been shared, from the typical user perspective, they look and function identically. In general, there are usually several different ways to connect to a shared directory or resource:

Method one: Users can often browse under network neighborhood to a particular directory. This method is often useful for copying or opening a document from a particular directory.

Method two: Under "My Computer" on Windows 95, 98, Windows NT Workstation 4.0 or NT Server 4.0, users can choose to connect a network drive. This method is recommended for running particular programs that look to run on a specific drive letter.

Method three: Using Windows Explorer or Windows File Manager, users can choose to connect a network drive. This method is recommended for running particular programs which run on a specific drive letter.

Method four: At a DOS or Command prompt, users can connect to a shared network directory using the following command:

```
NET USE [drive: | *] [\\computer\directory]
```

Drive	Specifies the drive letter you assign to a shared directory.
*	Specifies the next available drive letter. If used with /DELETE, specifies to disconnect all of your connections.
port	Specifies the parallel (LPT) port name you assign to a shared printer.

For example: "Net use x: \\imssvr\office"
Connects "x:" drive to the IMSSVR server, and a directory names "office"

In all methods except method one, you are connecting to a network drive by assigning or "mapping" a particular drive letter to a network resource. In general, workstations always reserve "A:" and "B:" drive letters for floppy drives. "C:" is generally the hard drive. "D:" is often reserved for a CD-ROM drive. A network connection using a drive letter is called a "virtual drive", meaning that the drive is not physically present on the workstation.

STEP-BY-STEP HANDOUT
Lesson 16-10

Part 1 - Sharing a Directory *

To practice sharing a directory, do one of two tasks:
1. Run lab 06 in _Networking Essentials._

OR

2. Manual lab: On an NT workstation or server, start File Manager.

- ❖ In File Manager, select/highlight a directory to be shared on the network.
- ❖ On the menu bar, choose Disk and Sharing.
- ❖ At this juncture, choose a name for the shared directory. (Note: For Win3.11 and earlier operating systems, keep the name to eight characters or fewer.)
- ❖ Choose Share and Okay.
- ❖ Log the new share name and location in your log book.*

Logging short cut: **In File Manager, with the directories clearly arranged visually to show the shared directories, choose Print Screen to make a copy of the screen. Start Paint under Accessories and choose Edit Paste. Save and print the screen capture.**

Part 2 - Setting File Security

1. Manual lab: On an NT workstation or server, start File Manager.

- ❖ In File Manager, select/highlight a shared directory.
- ❖ On the menu bar, choose Security→Permissions.
- ❖ At this juncture, decide who should have access to this directory and what type of access. Note: Domain administrators and Administrators typically have FULL CONTROL. This allows administrators to backup and view all files. Get Domain Users View and choose one user to have change permission.
- ❖ Once you successfully add the permissions listed above, choose APPLY and close the screen.
- ❖ Log the new file permissions in your log book.*
    - *Logging short cut:* In File Manager, with the permissions clearly displayed, choose Print Screen to make a copy of the screen. Start Paint under Accessories and choose Edit Paste. Save and print the screen capture.

Part 3 - Sharing a CD-ROM

1. If possible, practice sharing a CD-ROM.

Part 4 - Sharing a Printer

Choose the option depending on the set-up of the lab in the classroom:
1. Share a printer from a workstation.
2. Share a printer directly on the network and share from the server.
3. Run a simulation from Microsoft Press, *Windows NT Technical Support Training*

Printer Management

When managing printers, administrators can expect to perform the following tasks:
1. Setting up and configuring the printer.
2. Setting up and configuring printer driver for the workstations.
3. Checking and clearing print queues.
4. Clearing printer jams
5. Refreshing the printer
6. Etc.

Part 4 – Connecting to Shared Resources

1. Practice connecting and disconnecting network drives.

Connecting to Printers

To connect to a network printer from a workstation running Windows 95 or Windows NT:
1. Choose Start→Settings→Printers
2. Under Printers, choose ADD PRINTER.
3. Click Next
4. Choose Network Printer
5. Type the network path or choose Browse. (Note: The network path is generally the following format: \\servername\printer-share name. For example: \\imssvr\ims-staff)
6. Follow any prompts that follow. Occasionally, you will be asked to insert an appropriate printer driver disk.
7. Always print a test page to verify that the printer has been installed correctly.

Server Action Log
Lesson 16-10

Date & Time	Server	Action

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LESSON 16-11: Tape Backup *Approx. time:1 class*

Lesson overview:

Data loss prevention is a major concern to all companies. In this unit we will try to understand all of the possible causes of data loss and how to protect against them. Major disasters often lead to data loss; they can be caused by the weather or by man. In this lesson the students will develop and maintain a backup policy for their organization.

Students will demonstrate the ability to:

1. Develop and maintain a backup policy. (T/NET, ES-16)
2. Gather data through non-traditional research methods. (F/RES)
3. Reach a conclusion that is relevant to answering the initial inquiry. (F/T&V)
4. Communicate and document information for recommendations. (F/ANL)
5. Organize communication in a logical sequence and support communication with necessary data. (F/ANL)

Prerequisites: Lessons 16-1 through 16-10

Content required:

1) Implementation
2) Backup Plan
3) Testing and Storage
4) Maintaining a backup log-should be stored with the tapes
5) Selecting a tape drive

Resources:

Windows NT 4.0 Technical and Administrative Support CD, Backup Simulation

Materials checklist:

- ✓ Handout of IT NOTES (*JMOD16-11-1*) for each student
- ✓ Microsoft Press, Windows NT 4.0 Technical and Administrative Support CD

Equipment checklist:

- ✓ A computer that can run a CD
- ✓ An overhead LCD projector to show the CD
- ✓ A computer with a tape device attached with media

Teaching strategy:

Part 1 – Introductory Discussion

1. Introduce the purpose of the lesson and distribute the IT Notes (*JMOD16-11-1*) to use the outline for discussing the issues regarding backing up data. Gather ideas from the students as to why they feel the procedure is useful

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and point out the potential impact an electrical storm could have on the system, if it is not done regularly. Also point out that not all data needs to be treated the same way during backup – some data is more valuable than other. Ask students to consider the cost of backing up data, as opposed to the cost of losing data, and how this might impact the development of a backup procedure.

2. Have students view the simulation of a tape backup from the CD.
3. Review key points from the simulation and any other reasons or purposes.

Part 2 – Student Activity

4. Guide students through the development of a tape backup plan and record their ideas on the board. Be sure that it includes:
    - Implementation Plan
    - Schedule
    - Which files are to be backed-up
    - Method of backup
    - Number of copies
    - Where stored
5. Help students create a log and record these ideas on the board. The log should include:
    - Date of backup
    - Tape set number
    - Type of backup
    - Computer backed-up
    - Files backed-up
    - Who performed the backup
    - Location of all tape sets

HOT Activities:

1. Have students search the Internet for hardware vendors, choosing the tape backup system which they feel best supports the following list of considerations:
    - How much data is involved
    - Reliability
    - Capacity
    - Speed
    - Cost
    - Hardware compatibility

   Share vendor names and site addresses on the board as students discover them. Have students present their findings, with a short verbal explanation, after a designated time limit.
2. Assign students the task of developing a policy for an organization that includes a backup plan and a log that they have designed. Upon completion of the policies, conduct a round-table discussion and have each student present a part of all of the policy which he or she developed.

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Assessment methods:

- Observation by instructor of students participating in class discussions.
- Evaluation of backup policies developed for organizations, and feedback provided by instructors and students.
- Assessment of student ability to research vendor information on tape backup equipment by instructor.

Instructor evaluation and comments for improvement:

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IT NOTES
Lesson 16-11

1) Implementation:
    - Tape backups - inexpensive, easy to retrieve data
    - Determine how frequently to backup
    - Decide what critical data (files) to backup
        - Rule: If you can't live without it - back it up!
    - Plan a schedule of backing-up, doing so at low-usage periods.

2) Backup Plan:
    - Determine an approach for tape backup data protection appropriate for a site. Methods:
        - Full Backups
        - Copy
        - Incremental backups
        - Daily
        - Differential backup

3) Testing and Storage:
    - Test that a file can be backed up and restored; periodically confirm
    - Create 3 sets of the backup
    - Store one set on-site and 2 off-site

4) Maintaining a backup log (should be stored with the tapes):
    - Log contains:
        - Dates of backup
        - Tape set number
        - Type of backup
        - Computer backed-up
        - Files backed-up
        - Who performed the backup
        - Location of all tape sets

5) Selecting a tape drive:
    - How much data is involved
    - Reliability
    - Capacity - more than enough to backup the largest server
    - Speed
    - Cost of drive and related media
    - Hardware compatibility

6) Other backup devices: Iomega and CD writers

Let's Get Together: Getting Your Computer Connected

LESSON 16-12: Network Troubleshooting *Approx. time: 1 class*

Lesson overview:

This lesson is designed to provide troubleshooting experience for network problems. You, as the teacher are going to cause 3 different network problems that your students must diagnose and correct. You may do them all at once, or one at a time, as you see fit. Students can work alone or in small groups.

Students will demonstrate the ability to:

1. Identify cabling and hardware problems. (T/NET)
2. Identify workstation network configuration problems. (T/NET)
3. Analyze the information for relevance and accuracy. (F/ANL)
4. Recognize and reconcile conflicts between different information sources. (F/RES)
5. Organize and summarize the information. (F/ANL)
6. Analyze and synthesize information and communicate recommendations. (F/ANL)
7. Ask relevant questions of the customer to find out the source of a problem. (ES-6, ES-9)
8. Adapt technical language to the level of an audience. (F/D&BC)

Prerequisites: Lessons 16-1 through 16-11

Content required:

1) Workstation:
   a) Protocol
   b) Network card setup
   c) Workgroup settings
2) Cabling:
   a) Loose connections
   b) Broken wire

Resources:

Networking Essentials, Microsoft Press
Networking Essentials CD, Microsoft Press
http://www.generation.co.uk/networking.htm
http://fcit.coedu.usf.edu/network
http://www.cit.ac.nz/smac/nm210/default.htm
Search for "networking guide" on the Internet to find more resources

Materials checklist:

✓ Computers in a previously working network that have been tampered with to cause network problems.

Equipment checklist:

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✓ None required, although overhead projector and computer w/ projector are recommended

Teaching strategy:

Before Class Preparation by Instructor:

1) Sabotage! You need to cause 3 separate and distinct network problems. You can do these all to the same machine or to separate ones. Likewise, you can do these all on one day, or spread them out. Here are the suggested problems:
    a) Change the IRQ address of one of the network cards to conflict with something else in the computer
    b) If you have a thinnet/coax/10-base-2 network: unlock one of the connectors or terminators (don't let it fall off, just disconnect so it still looks like it's connected). If you have a twisted pair/UTP/10-base T or 100-base T network, unplug one of the cables from the back of a network card or from the hub. Alternately, disconnect the hub's power cord
    c) Change the network settings on one computer—you can delete a protocol, change the workgroup name, or change the log onto domain name
2) Develop a script which could be used in a role-playing activity based on these problems.

Part 1 - Preparatory Discussion

2. Read introduction to lesson explaining network problems.
3. Ask students what some possible causes might be. Lead with questions to assure that they talk about hardware (cabling etc.), and workstation (protocol, workgroup settings etc.).
4. Write these down on the overhead projector or use the computer to project them written in a word processor.

Part 2 – Hands-on Computer Activity

5. Have students try to find the causes of the network problems.
6. Conduct the role-playing with some of the students using the script that was prepared, based on the problems. Make sure that they are instructed to only give out information if they are asked. To make it even more realistic, have the student who is attempting to diagnose the problem be seated opposite (not facing) the computer. This would be a similar situation to tech support people on the phone trying to diagnose a problem.
7. Remind the students that they will need to document each and every procedure that they try, so they need to be methodical and take notes. This means documenting their suspicions, methods, conclusions, and fixes.

HOT Activities:

1. Have students work in groups to develop a set of guidelines for technical documentation by combining the notes taken from all the team members during the troubleshooting exercises. Then have the group prepare a written document which they will use to present their methodology to the class.

2. Conduct a discussion in which each group contributes its guidelines. Work with the class to come to a consensus and prepare a class version of the technical documentation guidelines.
3. Have students research the support sites of vendors of networking products and prepare a written analysis of the usability of the site.

Assessment methods:

- Instructor assessment of analysis of usability and research techniques by students.
- Observation by instructor of students' ability to troubleshoot simple networking problems.
- Evaluation of role-play participation by students and instructor.
- Assessment of thoroughness, organization, and accuracy of guidelines developed by groups.

Instructor evaluation and comments for improvement:

LESSON 16-13: Network Maintenance *Approx. time: 1 class*

Lesson overview:

Network maintenance is the prevention, detection and solution of network problems. These tasks usually fall under the job duties of a network administrator who manages the network and ensures that it runs efficiently. Problems can be detected by monitoring the performance of the network. Small peer-to-peer networks consisting of 10 computers can be monitored visually by one support person, while a large WAN may need a dedicated staff and sophisticated equipment to perform proper network monitoring. By consistently monitoring the network you will discover if any areas begin to show a decline in performance. This can be called preventative maintenance and there are some basic utilities designed by various vendors to make the administrator's job of monitoring easier.

Students will demonstrate the ability to:

1. Explain reasons for regular network system maintenance. (T/NET)
2. Analyze potential problems and develop preventative measures. (F/T&V)
3. Communicate effectively and in a concise manner. (F/D&BC))

Prerequisites: Lessons 16-1 through 16-12

Content required:

1) Monitoring Performance - most current Network OS include a monitoring utility
2) Total System Management
3) Maintaining a Network History

Resources:

Networking Essentials, Book and CD, Microsoft Press

Materials checklist:

✓ Handout of IT Notes (*JMOD16-13-1*) for each student
✓ *Networking Essentials*, Book and CD, Microsoft Press

Equipment checklist:

✓ Computer able to run CD

Teaching strategy:

Part 1 – Class Discussion

1. Distribute the IT Notes (*JMOD16-13-1*) and allow time for the students to look over the outline, while explaining the purpose of the lesson.

2. Lead the students in a brainstorming session of the issues concerning maintenance of a networked system. For example:
   - What is involved in maintaining a network
     - Maintain and improve performance
     - Future growth plans
     - Beware of network bottlenecks
     - Trouble spots, reasons
   - What utilities are available
   - SNMP concept
   - Total System Management
     - What it entails
     - Network Histories
     - Importance
3. Using Demo 21 for the *Networking Essentials* CD, review additional information on the care and maintenance of a network. As students are watching the demo, ask them to create a vocabulary list of new terms that are covered in the demo.
4. After the demo, address the vocabulary lists in class with a discussion of all the terms identified by students. Ask different students to attempt to define the terms based on how it was used in the context of the demo.
5. Summarize the importance of regular maintenance procedures on a network, and how an Administrator can achieve success by using vendor monitoring utilities to end the discussion.

Part 2 – Individual Assignment

6. Have students prepare a written analysis of ten ways by which the daily operations of an organization could be negatively impacted by insufficient or improper maintenance of its computer network. Then have the students address preventative measures that could be taken by the organization for each of the ten ways. Encourage the students to use as many of the new terms as possible in their analysis.

HOT Activities:

1. If you have the equipment available, each student should actually have the opportunity to perform maintenance on a server. All server software is shipped with vendor utilities that support the maintenance of the network. Set up a server that the students can experiment on. Use a performance monitor and design worksheets that take them through the monitors' use. Create an exercise that helps the student to become familiar with the process of creating and reading a performance chart, and to understand the basic components of the performance monitor. Take this as far as you like, using other vendor maintenance utilities.

Assessment methods:

- Instructor assessment and feedback provided for analysis reports.
- Observation and evaluation of student contribution to list of new terms.
- Assessment of additional practice with utility software for networks.

Instructor evaluation and comments for improvement:

IT NOTES
Lesson 16-13

1) Monitoring Performance - most current Network OS include a monitoring utility:
   a) To improve performance based on the existing configuration
   b) To provide for capacity planning and forecasting
   c) To provide essential information for bottleneck detection
      i) Bottleneck devices:
         (1) CPU's
         (2) Memory
         (3) Network cards
         (4) Disk controllers
         (5) Network media
      ii) Reasons:
         (1) Not being used efficiently
         (2) Hogging other resources or CPU time
         (3) Too slow
         (4) Lacks capacity to handle the load
      iii) SNMP - Simple Network Management Protocol:
            (a) Vendor Driven
            (b) Based on Internet Protocol Suite

2) Total System Management:
   a) Vendors have developed utilities for system-wide management

3) Maintaining a Network History:
   a) Indicate significant performance or equipment issues
   b) Provide a background against which current information may be compared

Module 17:
Customizing Your "Windows"

Module 17 – Customizing Your "Windows"

Learner Outcomes:

Teamwork

1. Organize and work in a team setting.
2. Recognize expertise and learn from others.
3. Work and communicate effectively with persons of different backgrounds.

Self Learning

4. Explain various learning styles and understand one's own learning style.
5. Identify and use training appropriate to meet the project needs.
6. Apply new learning in the context of learning goals.

Problem Solving/Testing

7. Identify technical problems; develop and implement solutions for problems found.
8. Explain the fundamental principles of a testing methodology.
9. Use a testing method appropriate for the project.
10. Interpret test results and communicate results and consequences.

Windows

11. Perform basic operations and troubleshoot basic problems in a Windows environment.
12. Customize the operating system environment.
13. Run multiple applications at the same time; import and export data between applications.

Prerequisites: Modules 1, 13 and 14

Total Class Time: Approximately 10 hours

INSTRUCTOR'S NOTE: This module is project-oriented. Although specific lesson plans are provided for individual days, you may choose to disseminate all of the information and details for the project during the first few days and merely use the lesson plan timeframe as progress checks towards completion during each class.

Outside readings and other resources:

- *Slaves of the Machine: The Quickening of Computer Technology* by Gregory Rawlins
- *Interface Culture: How New Technology Transforms the Way We Create and Communicate* by Steven Johnson
- *Probable Tomorrows: How Science and Technology Will Transform Our Lives in the Next Twenty Years* by Owen Davies

Module 17 – Customizing Your "Windows"

Module overview:

Many people spend every day on the computer preparing elaborate documents using the word processor, creating complicated spreadsheets, and sending or receiving hundreds of e-mail messages. Often these same users complain that it takes too long to get to the programs they use a lot or that it is difficult to find different programs because they don't remember what all of the "little pictures" do on their desktop in Windows. And, some prefer to use the keyboard as much as possible, instead of the mouse.

In this module you will learn how to customize Windows and develop a simple quick reference guide for your computer. You will also have the opportunity to train another person using your guide. The contents should cover explanations of, and - where necessary - basic instructions for, creation or modification of:

- File extensions
- Shortcuts
- The Control Panel
- Start Menu
- Programs Menu
- MouseKeys

It will first be necessary to perform some preliminary investigations of how the hard drive can be managed by system tools and to review the explanations of file extensions to determine the current status of your computer. Once this is accomplished, you can then begin exploring the rest of the Windows desktop to determine how to improve its look and feel. Once these activities are complete, utilize the Help section of Windows to learn about each of the above topics.

For your portfolio, you will produce and test a quick reference guide for customizing features in the Windows environment.

Lesson Titles:

- 17-1 'Extending' Your File Knowledge
- 17-2 Who's in Control?
- 17-3 Customizing the Menus
- 17-4 Yes, You Can Operate without a Rodent (Mouse)
- 17-5 Trying Out Your Guide

Customizing Your "Windows"

LESSON 17-1: 'Extending' Your File Knowledge *Approx. time: 1 class*

Lesson overview:
Before attempting customization or modification of a computer, students should recognize the need to determine the current status of the computer and to use some basic system tools. Students also will review the naming conventions for file extensions. Once accomplished, students will have the opportunity to consider the topics to be addressed in their quick reference guide.

Students will demonstrate the ability to:
1. Manage the hard drive, using system tools. (T/WIN, ES-16)
2. Describe the purpose of different types of files and recognize a file type through its extension. (T/WIN)
3. Inventory personal knowledge and skills. (F/SL)
4. Design a training and learning strategy to meet goals. (F/SL, ES-4)
5. Learn from others and build on others' expertise and strengths. (F/TW)

Prerequisites: Modules 1, 13, and 14

Content required:
1) Explanation of hard drive maintenance.
2) Description of file extensions and purposes.
3) Discussion of different learning styles:
   a) Visual
   b) Auditory
   c) Kinesthetic
4) Formats for quick reference guides

Resources:
Windows Help section "Disk Defragmenter" under System Tools
Windows Help section "DiskSpace" under System Tools
Windows Help section "ScanDisk" under System Tools
Windows Help sections "Filename extensions" and "Filenames"
Discovering Computers 2000 by Shelly Cashman
Examples of different types of training manuals, guides, or reference sheets

Materials checklist:
- ✓ Transparency and handout of Module 17 Overview (*JMOD17-Ovr)* for each student
- ✓ Using the Help sections referred to above, print out handouts for the students

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the Module Overview (*JMOD17-Ovr*) to the class and allow time for students to read the material thoroughly.
2. Begin the discussion by asking students to describe the kind of frustrations users may be feel, especially with new computers. As students reply, find out if they or any of their friends have felt the same way about new equipment, not necessarily just computers (for example, a new car with a different dashboard). Try to identify, with the students' help, ways by which the learning might have been accomplished more thoroughly or quickly and list these ways on the board.
3. Explain to the students that the purposes of this lesson are first to familiarize themselves with the current status of the computer, to check out the hard drive, and to determine what files are on the computer. Afterwards, they will have a chance to develop parameters for the quick reference guides.

Part 2 – Explanation and Hands-on Computer Activity

4. Conduct a discussion of the purposes of the following system tools. Direct students to the on-line Help section in Windows where each is explained and instructions are provided to accomplish the task.
    - Disk Defragmenter
    - DriveSpace
    - ScanDisk
5. Have students prepare a written 'System Status Report' on hard drive space utilization and content for their computers. Students should include specific details about their hard drives after the use of each of these system tools. Students also should be able to identify the different types and purposes of files found on the hard drive. (It may be necessary to provide categories of files depending on the number of files residing on the computers that the students are using.)
6. Monitor these class activities carefully and offer assistance should any problems arise.

Part 3 - Classroom Discussion

7. Ask the students to describe the process that they used to complete their reports. Guide them through a simple training scenario that might be used in the development of their guides. Include, for example, phases such as: *needs assessment*, *explanation of the content*, *application of the new information*, and *testing*. Emphasize the different ways that new information can be explained and practiced through visual, auditory, and kinesthetic approaches. Then have every student share one way to approach each of the phases. Point out that different types of information, along with different types of learning styles, need to be considered when designing a training experience. (If time is available, conduct a simple experiment with three students that requires them to follow a set of short instructions to accomplish

an unfamiliar activity, such as a knitting stitch, while the rest of the class observes. Provide only written instructions for one student, only verbal instructions for one student, and a demonstration for the last student. Have each of the students describe the learning experience and discuss the observations by the class.)

8. Instruct students to review the complaints listed in the Module Overview and to prepare a preliminary written outline of the issues that should be covered in the quick reference guide. Students also should include what type of approaches to the learning they would recommend for each issue.
9. Pass around samples of training manuals or guides and ask students to evaluate the effectiveness of the learning approaches used. In a short roundtable discussion, have students share their reasons or highlight features contained in the samples that they felt were valuable.

HOT Activities:

1. Have students report to the class the results from their status reports and compare/contrast any major differences among the computers. When differences arise, ask students to speculate as to the reasons how and/or why these situations might have occurred.

Assessment Methods:

- Observation by instructor of students working to determine the status of their computers.
- Evaluation and written feedback from the instructor of the 'System Status Reports' prepared by the students.
- Self-evaluation by the students of how much was learned and through what means.
- Review by the instructor of the written outlines for the students' quick reference guides.
- Participation of students in classroom discussions, evaluated by instructor.

Instructor evaluation and comments for improvement:

Customizing Your "Windows"

LESSON 17-2: Who's in Control? *Approx. time: 1 class*

Lesson overview:

One of the areas that the students will need to prepare for the quick reference guide is the use of shortcuts in Windows. Students must determine, however, what types of shortcuts would be appropriate for users. Once the necessary shortcuts have been identified, students will begin the process of outlining the steps required to create them. They will also have an opportunity to develop a way to explain the purposes of the icons in the Control Panel as they try out the functions and continue customization of their Windows environment.

Students will demonstrate the ability to:

1. Create shortcuts on Windows desktop. (T/WIN)
2. Customize environment using the Control Panel. (T/WIN)
3. Switch to a different printer on the network. (T/WIN)
4. Access and use information from manuals and computers. (ES-13)
5. Outline a sequence of steps which will lead to the desired outcome being accomplished in a timely manner. (F/PS)
6. Use good written communication to document all phases of the process. (F/PS)
7. Select and design a learning strategy that best meets the training goal. (F/SL)

Prerequisites: Lesson 17-1

Content required:

1) Information on the customization of Windows
2) Review of business tasks and useful software applications
3) Information on Control Panel
    a) Icons
    b) Purposes
4) Customization features

Resources:

Windows Help section "Shortcuts"
Windows Help section "How To – Change Windows Settings"
Windows Help section "How To – Set up Windows Accessibility Features"

Materials checklist:

- ✓ Handout of requirements for quick reference guides developed by instructor
- ✓ Transparency and handout of Desktop Diagram (*JMOD17-2-1*) for each student
- ✓ Transparency and handout of the Control Panel Diagram (*JMOD17-2-2*)

Equipment checklist:

✓ Overhead projector

Teaching strategy:

Part 1 – Before Class Preparation for Instructor

1. Based on the discussion in the previous lesson of effective features of training guides and manuals, you may need to prepare a set of requirements for the preparation of the students' quick reference guides. This might include certain formats or layout styles, use of graphics, length of guide, paper size, etc. Distribute a copy of these requirements to each student.

Part 2 – Introductory Discussion

2. Explain that the purpose of this lesson is to begin the process of identifying shortcuts on the Windows desktop and to explain the functions of the icons on the Control Panel
3. Distribute the Desktop Diagram (*JMOD17-2-1*) to the class and review the function of each of the icons on the diagram.
4. Ask the students to describe the kinds of tasks for which the computer is commonly used and to identify examples of appropriate software applications for accomplishing these tasks. Keep track of the students' answers on the board as the discussion continues.
5. At the end of the discussion, have each of the students prepare a written record of the list of possible software packages that might be found on a typical computer. Instruct the students to assign a priority level to each of the applications. For example: 1 – Used everyday, 2 – Used once a week, 3 – Used once a month, 4 – Used once every quarter, etc.
6. Explain that only the applications given a #1 priority qualify for a shortcut on the desktop at this time.

Part 3 – Hands-on Computer Activity

7. Using the Help section on "Shortcuts" in Window, have students study the information and print out the instructions on how to make shortcut modifications. Identify a group of software applications on the students' computers that can be used to practice modifying the Windows desktop with shortcuts.

Part 4 – Classroom Discussion

8. Distribute the Control Panel handout (*JMOD17-2-2*) to the class. Using the diagram to generate discussion, ask random students what the purposes are for some of the icons shown. As the different functions are explained, encourage the students to consider again the level of priority or 'need to know', as in a new user's case. As an example, use the situation of changing printers. (Note that there is already a special menu category under 'Settings' as well as an icon on the Control Panel.) At this point you might want the students to circle on the diagram the other icons that are most important for every user, and that should be included in the quick reference guide.

Part 5 – Hands-on Computer Activity

9. *WARNING:* If there are any settings that you do not want the students to change or even think of changing, point them out NOW. Explain what problems could result from poor judgement and/or lack of knowledge when changing settings (such as blurry screens, icons that are too close together and fonts that are unreadable).
10. Provide time for the students to explore every function of all of the icons in the Control Panel, paying special attention to those that will be included in the quick reference guide. Direct them to use the "How To" sections on changing Windows settings and features for instructions and explanations.
11. As students progress through the different icon functions, offer assistance or help hints when necessary.

HOT Activities:

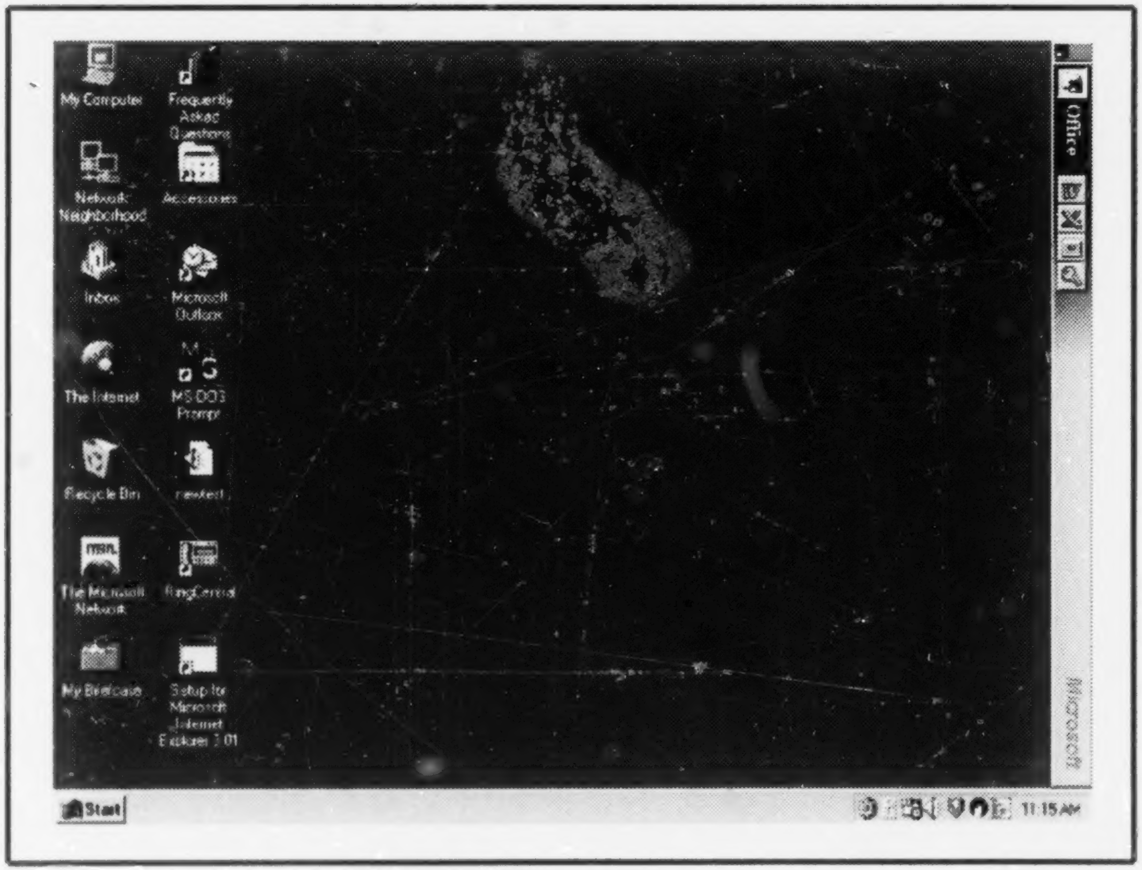
1. Assign the students the tasks of analyzing the process that they used to discover how to make shortcuts and of designing a learning strategy for this procedure. Have the students begin to document the steps in a written outline that will become a section of their quick reference guide.
2. Instruct students to continue the design and preparation of their quick reference guides, incorporating the new information about the Control Panel. Remind students to paraphrase any instructions taken from the Windows Help sections that they wish to include in their guide. Also, encourage students to be creative in their approaches to the training solutions.

Assessment Methods:

- Observation by instructor of students practicing their mastery of shortcuts.
- Review and written feedback by instructor of students' outlines of shortcut procedures.
- Observation by instructor of student progress in the development of the quick reference guides.
- Observation by instructor of students' participation in class discussions and in computer lab activities.

Instructor evaluation and comments for improvement:

Desktop Diagram
Lesson 17-2


My Computer
Frequently Asked Questions
Network Neighborhood
Accessories
Inbox
Microsoft Outlook
The Internet
MS-DOS Prompt
Recycle Bin
newtext
The Microsoft Network
RingCentral
My Briefcase
Setup for Microsoft Internet Explorer 3.01
Office
Microsoft
Start
11:15 AM

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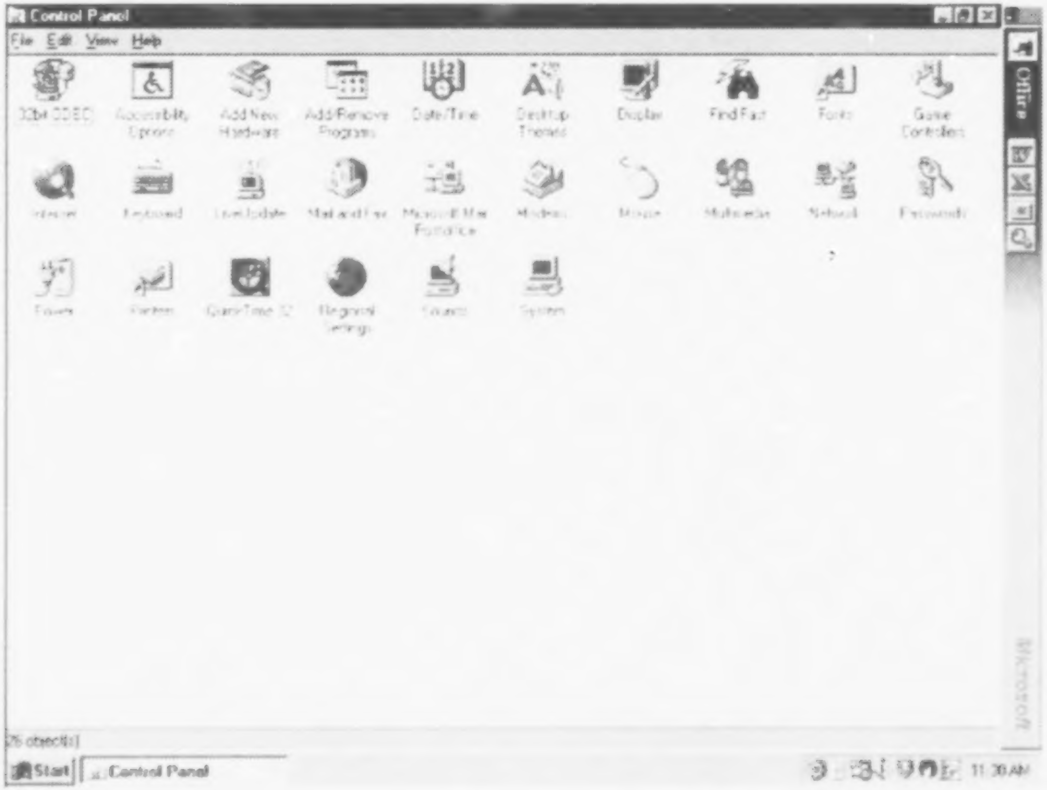
Control Panel Diagram
Lesson 17-2


Control Panel
File Edit View Help
32bit ODBC
Accessibility Options
Add New Hardware
Add/Remove Programs
Date/Time
Desktop Themes
Display
Find Fast
Fonts
Game Controllers
Internet
Keyboard
LiveUpdate
Mail and Fax
Microsoft Mail Postoffice
Modems
Mouse
Multimedia
Network
Passwords
Power
Printers
QuickTime 32
Regional Settings
Sounds
System
Office
Microsoft
26 object(s)
Start
Control Panel
11:30 AM

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Customizing Your "Windows"

LESSON 17-3: Customizing the Menus *Approx. time: 1 class*

Lesson overview:

Part of the flexibility of Windows is its ability to address functionality in a variety of ways. Students will now see this as they determine which programs should be added to the Start menu for their computer. During this lesson, students will also continue to customize Windows by adding or changing titles listed on the Programs Menu. It is important for them to keep in mind that the reason for the modification is to improve the productivity of the computer user.

Students will demonstrate the ability to:

1. Add commands to the Start menu. (T/WIN)
2. Add programs to the Programs Menu. (T/WIN)
3. Access and use information from manuals and computers. (ES-13)
4. Explain the different steps of the procedures. (ES-7)
5. Apply new knowledge or skills effectively. (F/SL)
6. Document steps in procedure, using good written communication. (F/PS)

Prerequisites: Lessons 17-1 and 17-2

Content required:

1) Information on modifying Start menu
2) Information on modifying the Program Menu.

Resources:

Windows Help Section "Start Menu"
Windows Help section "Programs Menu"

Materials checklist:

- ✓ Transparency and handout of Start Menu Diagram (*JMOD17-3-1*) for each student
- ✓ Transparency and handout of Programs Menu Diagram (*JMOD17-3-2*) for each student

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of this lesson is to address the ease of use when it comes to accessing frequently-used programs and to customize the Start and Programs menus.
2. Distribute the Start Menu Diagram (*JMOD17-3-1*) to the class and have

students review the information.

3. Ask the students which programs they would recommend adding to the Start Menu and why. As the discussion continues, point out that there are often multiple ways to access many features of Windows and programs. Have students comment on this phenomenon, which could be tied into how people learn differently or prefer different ways of accomplishing the same task.
4. Discuss and demonstrate how to drag and drop programs on the Start Menu and how to create and edit tool bars if the students are not familiar with these operations. It may also be necessary to point out differences in the Windows 98 version of the desktop.
5. Have the students choose only three programs to be added to the Start Menu.

Part 2 – Hands-on Computer Activity

6. Provide time for students to study the Start Menu section in Windows Help and practice modifying the Start Menu.
7. Monitor the activity and offer assistance if needed.

Part 3 – Classroom Discussion and Demonstration

8. Distribute the handout of the Programs Menu Diagram (*JMOD17-3-2*) to the class and use during the discussion.
9. Ask the students to compare their Programs Menu to the diagram and comment on the differences. Instruct students to use the diagram to record (either with a reference number or with the name) the software programs that are currently accessed by the Programs Menu on their computer.
10. Have students consider ways to improve the organization or content of the Programs Menu for a new user. As suggestions for modifications are made by the students, list these on the board and have the students do the same on the back of their diagram.

Part 4 – Hands-on Computer Activity

11. Provide time for students to study the Programs Menu section in Windows Help and practice modifying the Programs Menu.
12. Monitor the activity and offer assistance if needed.

HOT Activities:

1. Instruct students to continue the design and preparation of their quick reference guides, incorporating the new information about the Start and Programs Menus and how they can be easily modified. Remind students to paraphrase any instructions taken from the Windows Help sections that they wish to include in their guide. Encourage students to be creative in their approaches to the training solutions. Have students print out screen shots of their modified menus in a Word document listing the changes made, and turn in for review.

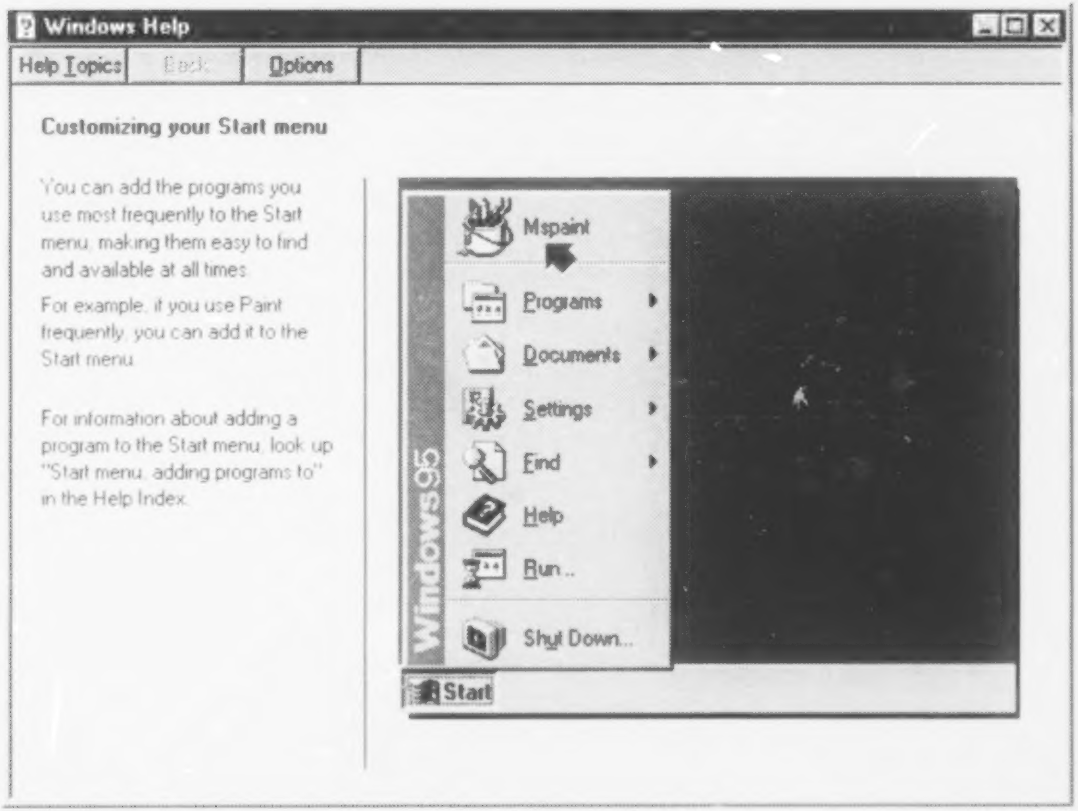
Assessment Methods:

- Observation by instructor of student progress in the development of the quick reference guides.
- Observation by instructor of students' participation in class discussions and in computer lab activities.
- Evaluation and written feedback provided by instructor for students' documents listing modifications made to the Start and Programs menus.

Instructor evaluation and comments for improvement:

JMOD17-3-1

Start Menu Diagram
Lesson 17-3


Windows Help
Help Topics
Back
Options
Mspaint
Programs
Documents
Settings
Find
Help
Run...
Shut Down...
Start
Windows95

Customizing your Start menu

You can add the programs you use most frequently to the Start menu, making them easy to find and available at all times.

For example, if you use Paint frequently, you can add it to the Start menu.

For information about adding a program to the Start menu, look up "Start menu, adding programs to" in the Help Index.

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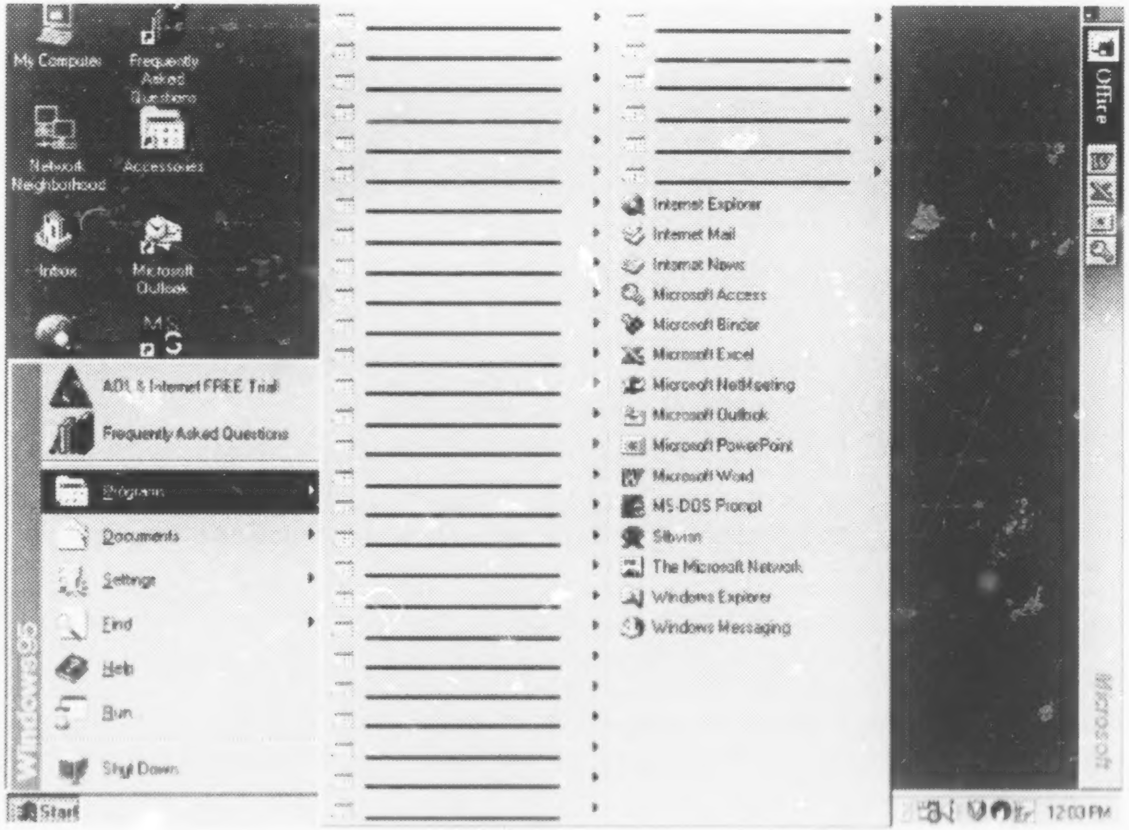
Programs Menu Diagram
Lesson 17-3


My Computer
Frequently Asked Questions
Network Neighborhood
Accessories
Inbox
Microsoft Outlook
AOL & Internet FREE Trial
Frequently Asked Questions
Programs
Documents
Settings
Find
Help
Run
Shut Down
Windows95
Start
Internet Explorer
Internet Mail
Internet News
Microsoft Access
Microsoft Binder
Microsoft Excel
Microsoft NetMeeting
Microsoft Outlook
Microsoft PowerPoint
Microsoft Word
MS-DOS Prompt
Sibvian
The Microsoft Network
Windows Explorer
Windows Messaging
Office
Microsoft
12:03 PM

Customizing Your "Windows"

LESSON 17-4: Yes, You Can Operate Without a Rodent (Mouse) *Approx. time: 1 class*

Lesson overview:

The last issue to be addressed is the ability to use the keyboard instead of the mouse for as many functions as possible. Students will have the opportunity to explore the different methods for accessibility in Windows. Students also should have time during this lesson to complete the finishing touches to their quick reference guides.

Students will demonstrate the ability to:

1. Substitute keyboard strokes for mouse. (T/WIN)
2. Access information from manuals and computers. (ES-13)
3. Explain the different steps of the procedure and share information with others. (ES-7)
4. Apply new knowledge or skills effectively. (F/SL)
5. Document steps, using good written communication. (F/PS)

Prerequisites: Lessons 17-1, 17-2, and 17-3

Content required:

1) Information on activating MouseKeys.

Resources:

Windows Help section "MouseKeys"

Materials checklist:

✓ Transparency and (optional) handout of MouseKeys Worksheet (*JMOD17-4-1*) for each student

Equipment checklist:

✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Using the MouseKeys transparency (and student handouts) (*JMOD17-4-1*), explain that the purpose of this lesson is to understand the use of MouseKeys. Ask students to identify why and when the MouseKeys might be useful. For example, in some cases, people would prefer to use the keyboard instead of the mouse to move around in Windows.
2. Conduct a discussion of the issue of accessibility and have students identify

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as many ways as they can that would satisfy this request. Remind students of the keyboard commands that can be found along side of the drop down menu functions.

3. Ask students to try moving around Windows without the use of the mouse on their computers, and relate their experiences. Have students evaluate their moves.

Part 2 – Hands-on Computer Activity

4. Provide time for students to study the "MouseKeys" section in Windows Help and practice activating the keys.
5. Monitor the activity and offer assistance if needed.

HOT Activities:

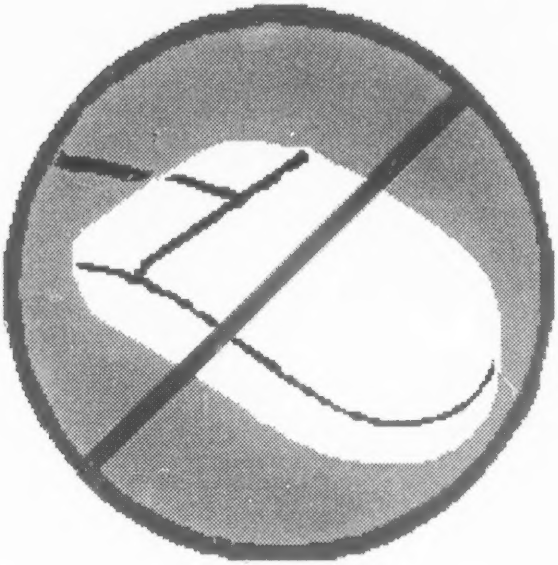
1. Instruct students to continue the design and preparation of their quick reference guides, incorporating the new information about MouseKeys and how they can be easily activated. Remind students to paraphrase any instructions taken from the Windows Help sections that they wish to include in their guide. Encourage students to be creative in their approaches to the training solutions.
2. Have students complete any outstanding sections of their quick reference guides and then choose a partner to proofread the guide. *Guides must be ready for use before the start of the next lesson.*

Assessment Methods:

- Observation by instructor of student progress in the development of the quick reference guides.
- Observation by instructor of students' participation in class discussions and in computer lab activities.

Instructor evaluation and comments for improvement:

MouseKeys Worksheet
Lesson 17-4



Customizing Your "Windows"

LESSON 17-5: Trying Out Your Guide *Approx. time: 1 class*

Lesson overview:
Students will spend time during this lesson training a partner and testing the effectiveness of their quick reference guides. Although these tasks can be accomplished within the class, it would be advisable to invite students from another class to be the trainees. Students also will have an opportunity to make recommendations for revisions to their guides based on the receipt of their evaluations.

Students will demonstrate the ability to:
1. Listen effectively and use good oral communication skills, both one-on-one and in groups while analyzing training process. (F/PS, F/TW, ES-4)
2. Prepare a detailed written report communicating the process and outcome. (F/PS)
3. Evaluate effectiveness of one's learning against goals and expectations. (F/SL)
4. Follow a defined testing procedure. (F/T&V)
5. Use and/or communicate data and conclusions to facilitate the taking of corrective steps or making needed modifications. (F/T&V, ES-8)

Prerequisites: Lessons 17-1, 17-2,17-3, and 17-4

Content required:
1) Completed quick reference guides produced by students

Materials checklist:
- ✓ Transparency and handout of Student Evaluation Forms (*JMOD17-5-1*) for each student to be trained
- ✓ Handout of Test Results Chart for recording results of training session (*JMOD17-5-2*)

Equipment checklist:
- ✓ Overhead projector

Teaching strategy:

Part 1 – Before Class Preparation for Instructor
1. Invite students from another class at the center to participate in the testing of the quick reference guides, if possible.

Part 2 – Preparatory Classroom Discussion
2. Ask the students what kind of process they would use to test their quick reference guides. Guide them through the development of a simple testing

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procedure that includes at least the following steps:

- Determine the expected outcome
- Conduct training sections
- Gather and record results of trainees
- Compare the actual results with the expectations
- Review and revise
- Repeat process

Have students make a chart with two columns: Expected Outcomes and Actual Results or use the handout provided (*JMOD17-5-2*). Under Expected Outcomes, students would fill in the topics covered by their quick reference guides. For example, Modify Start Menu or Use MouseKeys.

3. Instruct students to observe carefully and record the reactions in the second column of their trainees as they use the quick reference guides.

Part 3 – Introductory Discussion including Trainees

4. Welcome the new students who are participating as trainees. Explain to both classes that the purpose of this lesson is to test the effectiveness of a quick reference guide for customizing Windows.
5. Distribute the Evaluation Forms (*JMOD17-5-1*) to the trainees to complete after the training session.
6. Working in pairs of author/trainer and trainee, instruct the students to cover as many sections in their quick reference guides as time will allow. (Instructor's Note: If there is a very limited amount of time, identify specific section/s for each student to cover, varying the topic areas.)

Part 4 -- Hands-on Computer Activity

7. Allow students to work with their trainees, offering assistance only when asked.
8. Depending on the time available with the trainees, make sure that all students manage their time to be most productive.
9. Once the formal training is finished using the guides, remind the trainees of how important it is to complete the evaluation form carefully and thank them for their participation.

HOT Activities:

1. Conduct a classroom discussion that allows the student authors to describe their training experiences. Ask the students to relate good and bad situations, areas that they would change, things they wish they could have done differently, etc. At the end of the discussion, have each student write a short summary of the verbal feedback received throughout the training session.
2. Instruct students to analyze the evaluations provided for their guide by the student trainees. Again, ask the students to prepare a written summary of the evaluation and to recommend changes/improvements that could be incorporated into their quick reference guides. If time permits, extend this activity to the actual revision of the quick reference guides to incorporate all of the recommendations.

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Assessment Methods:

- Evaluation of and written feedback by the instructor for the test results of each quick reference guide.
- Observation of students' team-teaching activity by instructor.
- Assessment by student trainees of effectiveness of quick reference guide.
- Self-assessment by student authors on the effectiveness of their training experience.
- Observation by instructor of student discussions on testing procedures and recommendations for improvements to quick reference guides.

Instructor evaluation and comments for improvement:

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Student Evaluation Form
Lesson 17-5

Author and Trainer:______________________________

Student:___________________________

Training Content:______________________________

……

Check the rating for each of the criteria below based on the following scale of 5 = Works Well and Ready to Use and 1 = Needs Considerable Improvement.

5	4	3	2	1	Criteria
○	○	○	○	○	Instructions are well organized and achieve proper results.
○	○	○	○	○	Guide is free from incorrect or confusing directions.
○	○	○	○	○	Guide is complete (all sections are included).
○	○	○	○	○	Guide is easy to read and understand.
○	○	○	○	○	Visual layout facilitates learning.
○	○	○	○	○	Graphics are of a professional quality.
○	○	○	○	○	All key points and concepts are covered.
○	○	○	○	○	Instructional strategies seem to be appropriate for content.
○	○	○	○	○	Written content exhibits good communication skills.
○	○	○	○	○	Guide is free from grammatical and spelling errors.

Comments:

Test Results Chart
Lesson 17-5

Author and Trainer: ______________________________

Expected Outcomes	Actual Results

Comments:

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Module 18:
You Asked For It; You Got It; Now Figure Out How To Make It Work!

Module 18 – You Asked For It; You Got It; Now, Figure Out How To Make It Work!

Learner Outcomes:

Software Installation/Configuration

1. Install software programs and perform basic configuration operations.
2. Explain basic compatibility issues.
3. Troubleshoot basic configuration problems.

Problem Solving/Troubleshooting

4. Identify and use a wide range of resources and techniques to address technical problems, develop solutions, and then implement resolution plans.
5. Identify and use appropriate communication tools and methods to correctly isolate and identify technical problems.

Team Work

6. Organize and work in a team setting.
7. Recognize expertise and learn from others.
8. Work and communicate effectively with persons of different backgrounds.

Prerequisites:

Modules 1, 13, 14, and 17

Special Note to Instructor: Lesson 18-4 of this module requires the installation of up to 5 software programs. On page 3 are some suggestions for sources of software programs. You may also choose to have the students participate in the acquisition process.

Total Class Time: Approximately 10 hours

Outside readings and other resources:

Any manual that accompanies a software program from front to back!

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Module 18 – You Asked For It; You Got It; Now, Figure Out How To Make It Work!

Module overview:

No matter what software is installed on your computer now, there will always be more new programs which you would like to add. It is estimated that each year over 40,000 new software programs are produced. Of these, there's probably at least one that you would like to have!

Every new software program must be installed on the computer before it is fully functional. Most of the installation processes are automated and require very little computer knowledge or skill. If you choose to customize the installation of a program, however, proceed with caution and be prepared to furnish more technical information about your computer's configuration.

In this module, you will review some of the basic commands in DOS and then practice the installation of different software programs. For your portfolio you will produce:

1. A hardware compatibility list.
2. A software specification list.
3. A document describing different software installation procedures.

Lesson Titles:

- 18-1 Doing It With DOS
- 18-2 Software's Best Kept Secret: Reading the Manual
- 18-3 Before You Insert That Disk
- 18-4 You Could Even Do It Blindfolded
- 18-5 After the Music Stops

Suggested Sources for Software Samples

Begin the process of collecting or acquiring software samples for the students to install as early as possible.

Here are some ways to get started:

1. Many computer magazines will contain advertisements by software manufacturers offering FREE demos. Call their 800 numbers and place your order.
2. If you have any local software companies, call them and request a classroom copy for evaluation purposes. Offer to provide them with student evaluations of their product/s but do not offer money. You should be able to get these FREE.
3. Contact software manufacturers and request a 'NOT FOR RESALE' or 'DEMO' copy of their product/s. Explain how you are using it and again offer feedback from the class in return for each FREE copy.
4. Identify software samples or other programs that can be downloaded FREE from the Internet. Especially useful would be Adobe Acrobat and WinZip.
5. Ask staff or other colleagues for old software programs that they no longer use or need. CAUTION: Be very careful about accepting the use of someone's personal copy of a software product for this activity. You may unknowingly infringe upon the copyright and set a very poor example for students. Develop a simple form transferring the rights/possession of the software program to the JC center as a donation.

You Asked For It; You Got It; Now, Figure Out How To Make It Work!

LESSON 18-1: Doing It With DOS

Approx. time: 2 classes

Lesson overview:

A very helpful skill when working with software is the ability to use basic commands in DOS. Although most new software programs are written for the newer platforms in Windows and Mac, there are still many older programs still being used everyday, especially in businesses, that require an understanding of DOS.

Students will demonstrate the ability to:

1. Access DOS from the Windows operating environment. (T/SW)
2. Navigate through drives and directories using DOS. (T/SW)
3. Describe and use common DOS commands. (T/SW)
4. Follow directions to complete task. (ES-4, ES-15)
5. Share information and explain procedures to another person. (ES-7)

Prerequisites: Modules 1, 13, 14, and 17

Content required:

1) Information on DOS

Resources:

Books such as *DOS for Dummies* or other reference manuals
AOL offers a DOS Primer that has excellent handouts on all aspects of DOS

Materials checklist:

- ✓ Transparency and handout of Module Overview (*JMOD18-Ovr*)
- ✓ Transparency and handout of What's the Difference Chart (*JMOD18-1-1*)
- ✓ Step-by-Step handout on DOS commands (*JMOD18-1-2*) for each student

Equipment checklist:

- ✓ Overhead Projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the Module Overview and allow time for the students to read through the information.
2. Explain that the purpose of this first lesson is to review the operating system known as DOS and to perform some of its basic commands. Some of these commands can be useful when determining the status of software programs

or troubleshooting software configuration problems after an installation.

3. Have students participate in this initial discussion by posing questions like "What does DOS stand for?", "What does DOS do?", What is the difference between MS-DOS and DOS?" or "Where can you find DOS?"

Part 2 – Computer Demonstration and Discussion

4. Distribute the chart (*JMOD18-1-1*) and the Step-by-Step (*JMOD18-1-2*) handouts. Using the transparencies, walk the students through the first three sections. Verify after Section 1 that the column with the Windows labels is completed correctly (i.e. Drive label is [C:], Folder label is Job Possibilities, etc.).
5. Before or during the completion of Section 2, help the students discover the naming conventions used by DOS. See if they can figure out that there are always only 8 characters before the extension and the use of the ~ symbol. Describe the use of the period to separate the name and the extension and demonstrate the use of the asterisk using the Directory command.
6. After the completion of Section 3, verify that all of the students have completed the chart correctly and understand the importance of entering the names of the directories or files exactly as DOS requires.

HOT Activities:

1. Instruct students to create a new document in a different folder. Have students complete the What's the Difference chart on their own using the new example. If students struggle with any of the DOS concepts about naming or command structure, review these before continuing.
2. Assign students the task of completing Section 4 individually. Monitor their progress closely and offer assistance as needed. Once everyone has finished, have students share their findings to determine the accuracy of their answers.
3. In pairs, ask students to conduct a DOS drill. One partner would develop a task requiring the use of one of the DOS commands and while the other partner is responsible for identifying and performing the requested command correctly. Partners would continue to practice their DOS skills, alternating roles until each partner has successfully performed at least five different command sequences. Have the pairs keep a written record of their commands to turn in at the end of the exercise.
4. If available, have students run a DOS application on their computer and record any differences from the Windows platform.

Assessment Methods:

- Instructor observation of students completing their charts correctly using different examples.
- Review and feedback by instructor of list of DOS commands practiced by pairs of students.

Instructor evaluation and comments for improvement:

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What's The Difference
Windows vs. DOS
Lesson 18-1

Windows Drive		**DOS Drive**	
Folder		**Directory**	
Folder in Folder		**Sub-Directory**	
File Name		**File Name**	

STEP-BY-STEP HANDOUT
Lesson 18-1

Section 1

1. Using Windows Explorer, create a new folder in the My Documents folder titled **Job Possibilities**.

2. Using your word processor, create a document containing a list of companies that have jobs you are interested in and save the document with the title **Companies of Interest** as a **txt** file (text file) in the Job Possibilities folder.

3. Fill in the column with the labels of the drive, folders, and file name as displayed in Windows Explorer on your What's The Difference chart.

Section 2

4. Access DOS (or MS-DOS) using one of the following ways:
   - Restart your computer in MS-DOS mode
   - Click the MS-DOS Prompt in the Programs Menu

5. Type **CD** and **Enter** to close the Windows directory and return to the main prompt for the C Drive.

6. Fill in the label for the C Drive in DOS on your chart.

7. Find the corresponding label for the My Documents folder by using the DOS command for listing the contents of a drive or directory:

   - Type **DIR** and press **Enter**. The contents of the drive will scroll down the screen quickly.

   - Type **DIR/P** and press **Enter**. The contents will scroll down a page at a time. Continue to press Enter to see the rest of the contents

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8. Once you find the name, fill in your chart and open the directory using the **C**hange **D**irectory command.

Section 3

9. Find the corresponding label for the Job Possibilities folder by using the **Dir**ectory command for listing the contents of My Documents.

10. Once you find the name, fill in your chart and open the Job Possibilities directory using the **C**hange **D**irectory command. Be sure to type the names of both directories exactly as they are listed in DOS. For example, your command would look something like this:

```
CD\firstone\second
```

11. Repeat the **Dir**ectory command to find the DOS label of your file named Companies of Interest and fill in your chart.

12. Type **CD\** and **Enter** to return to the main prompt for Drive C.

13. Repeat steps 8 through 12 until you are comfortable working in DOS.

Section 4

14. Study each of the following commands and write a description of the action performed. Then perform the command to determine if your answer is correct.

a.

```
C:\mydocu~1\jobpos~1>COPY compan~1.txt c:\mydocu~1
```

b.
```
C:\mydocu~1>REN compan~1.txt testfile.txt
```

c.
```
C:\mydocu~1>DEL testfile.txt
```

d.
```
C:\mydocu~1>MD newone
```

e.
```
C:\mydocu~1\jobpos~1>TYPE compan~1.txt
```

f.
```
C:\mydocu~1\jobpos~1>EDIT compan~1.txt
```

You Asked For It; You Got It; Now, Figure Out How To Make It Work!

LESSON 18-2: Software's Best Kept Secret: Reading the Manual

Approx. time: 2 classes

Lesson overview:

It is a common practice for customers to review software programs prior to purchase because selection is not always based only on cost but also on features and ease of installation and use. Another consideration is often the hardware and software requirements of new programs: if the program requires substantial upgrades to the existing computers and software, then the cost increases in other ways.

The first step in this process is to read the documentation to determine if in fact the software does what you expect it to do. In the long run, this will save a lot of time and wasted effort.

Students will demonstrate the ability to:

1. Read and follow documentation that accompanies software products. (T/SW)
2. Analyze/interpret and summarize/synthesize information. (F/ANL)
3. Use effective communication skills when interacting in a team environment. (F/TW, ES-10)

Prerequisites: Lesson 18-1

Content required:

1) Documentation that accompanies software products:
    a) Technical manuals
    b) Read Me files or guides
    c) Troubleshooting tips
    d) Maintenance/upgrade procedures
    e) Warranty information
    f) Compatibility issues

Resources:

Actual manuals from software programs loaded on computers in the class lab
Web sites for software manufacturers

Materials checklist:

- ✓ A collection of as many different kinds of manuals and documentation for software programs as possible, so that each student has a sample to use

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of this lesson is to explore the value that can be found in reading the documentation that accompanies a software program.
2. Distribute a sample manual or software documentation to each student and then have students form small groups for the reading activity.

Part 2 – Group Reading and Discussion Activity

3. Ask each member of the group to read the first few sections or chapters of his or her sample of documentation and then to scan the rest of the material, looking for important information. Instruct them to take notes and record the page numbers where the information is located.
4. Set a time limit for the group members to complete the reading assignment of their individual samples, and monitor the progress of the students to maintain productivity.

HOT Activities:

1. After completing their readings, ask group members to share with their group the results of their search for important information. As group members point out information that they found, have one of the group members record the type of information found by each member. After everyone in the group has identified important types of information, have the group develop a composite list of what types of important information the group identified that should be searched for prior to installing a software program.
2. Conduct a classroom discussion and allow each group to report its findings. Record different types of information presented by the groups on the board. Once all of the groups have contributed their results, ask the students to interpret the significance of the findings from the entire class. Emphasize that, regardless of the software programs, installation issues and important information that the user should be aware of is very consistent.
3. Conclude the discussion by asking students to consider other features (layout, size, use of pictures) in documentation that makes it easier to pick out important installation information and to identify any that they found. Display these to the class.
4. Ask students to analyze the list on the board and choose the one that they feel is most important to look for in the documentation. Ask them to support their opinions in a short written paragraph.

Assessment Methods:

- Instructor observation of group process and student participation in the group and class discussions.
- Students evaluation of the effectiveness of the group process.
- Assessment and written feedback by instructor of student paragraphs.

Instructor evaluation and comments for improvement:

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You Asked For It; You Got It; Now, Figure Out How To Make It Work!

LESSON 18-3: Before You Insert That Disk *Approx. time: 2 classes*

Lesson overview:

Before a successful installation can be started, hardware and software requirements must be noted. Students identify the requirements for each of the programs which they will install during the next lesson, and will attempt to anticipate any possible roadblocks to a series of smooth installations.

Students will demonstrate the ability to:

1. Document complete hardware specifications required for successful software installation. (T/SW)
2. Document complete software specifications including operating systems and currently installed programs. (T/SW)
3. Identify the factors affecting the desired outcome and evaluate possible solutions relative to desired outcomes. (F/PS)

Prerequisites: Lessons 18-1 and 18-2

Content required:

1) Hardware specifications for software:
    a) Location
    b) Comparison to system specs
    c) Identification of possible discrepancies
2) Software specifications for software program:
    a) Location
    b) Comparison to system specs
    c) Identification of possible discrepancies

Resources:

Packaging and manuals of sample software
Web sites of manufacturers

Materials checklist:

- ✓ Transparency and copies of Hardware Spec Form (*JMOD18-3-1*) for each student
- ✓ Transparency and copies of Software Spec Form (*JMOD18-3-2*) for each student
- ✓ Sample software programs for each student

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the second key to a successful installation is verifying that your computer has everything you need before you start the process.
2. Distribute the handouts (*JMOD18-3-1* and *JMOD18-3-2*) and the software programs to each student.
3. Have the students review the handouts and sample software. Ask them to identify where they might start to look for the required information. Students should be able to point out the location of most of the specification information on the packaging or on the CD.
4. Ask them where they will find the information on their computer systems to compare against the specifications. Student portfolios should contain this information that was gathered during previous lessons. If not, ask them what other methods they might use to determine this information.
5. Finally, have the students recommend ways to address any differences between their computer specifications and those of the software programs. Encourage them to use the manufacturers' web sites if they have any questions or concern about the success of their upcoming installations and to document contacts made with any responses.

HOT Activities:

1. Have students complete a Hardware Specification Form and Software Specification Form for each of the software programs that they will install.
2. When students have completed all of their forms, instruct them to prepare a written report, summarizing their findings and predictions for smooth installations of programs.

Assessment Methods:

- Instructor observation of the students as they complete their specification forms.
- Evaluation and written feedback by instructor of forms.
- Instructor assessment of written report that students prepared.

Instructor evaluation and comments for improvement:

Hardware Specification Form
Lesson 18-3

Student Name: ______________________

Name of Software Program: ______________________

List the minimum hardware requirements to successfully install this program.

Software Specification Form
Lesson 18-3

Student Name: ____________________

Name of Software Program: ____________________

List the minimum software requirements to successfully install this program.

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You Asked For It; You Got It; Now, Figure Out How To Make It Work!

LESSON 18-4: You Could Even Do It Blindfolded *Approx. time: 2 classes*

Lesson overview:

Having experience with a number of different software installations will generally prepare the students for any future installations they might encounter. During this lesson students are required to document different installations of software programs and to share the most unusual ones with the class.

Students will demonstrate the ability to:

1. Install software using default options. (T/SW)
2. Document steps involved in a software installation procedure. (T/SW)
3. Install new software on standalone computers in a Windows type environment. (T/SW)
4. Share information and explain procedures to class. (E-7)

Prerequisites: Lessons 18-1, 18-2, and 18-3

Content required:

1) Methods of installation:
   a) Start/Run
   b) Control Panel/Add Program
   c) Auto Install in Windows 95
2) Types of installation:
   a) Default options
   b) Customized options
   c) Other options
3) Uninstall capabilities
4) Online sources

Resources:

Online Help in Windows 95/98
Installation instructions contained in software manuals

Materials checklist:

- ✓ Transparency of Software Installation Form (*JMOD18-4-1*)
- ✓ Copies of Software Installation Form (*JMOD18-4-1*) for each student
- ✓ Software samples for each student

Equipment checklist:

- ✓ Overhead projector
- ✓ Computer display projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the copies of the Software Installation Form (*JMOD18-4-1*) and software samples to each of the students.
2. Explain that during this lesson students will have an opportunity to document their steps in the installation of several software programs.
3. Describe the different methods and types of installation that are available. Using the computer display, walk the students through the installation of one software program using each of the different methods and types.
4. If possible, instruct the students to use each method and type at least once during their installations.

Part 2 – Hands-On Computer Activity

5. Have students continue working during the class until each student has successfully completed all installations and the appropriate documentation.
6. If available, have students identify software programs, upgrades, or demos acceptable for downloading from the Internet. Instruct students to record the installation processes and any differences encountered.

HOT Activities:

1. Have students who finish early continue to install more types of programs or help other students who are having difficulty with any of their installations.
2. Upon completion of the installation procedures, ask students to review each of their installation documents and choose one procedure that they would like to demonstrate for the class. Using a different computer and the computer display projector, have each student walk the class through the installation providing reasons for their choice.

Assessment Methods:

- Assessment by instructor of accuracy and completeness of student Software Installation forms.
- Student assessment of presentations of software installation samples.
- Observation of students by instructor as they demonstrate their installation presentation.

Instructor evaluation and comments for improvement:

Software Installation Form
Lesson 18-4

Software Title:________________ **Student Name:**________________

1. Describe file status before installation:

2. Specify the method of installation used:
   - ☐ Start/Run
   - ☐ Control Panel/Add Program
   - ☐ Auto Install through Windows 95/98
3. Type of installation:
   - ☐ Default
   - ☐ Customized
   - ☐ Other________________
4. Document each step of the installation procedure below:

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5. Uninstall performed? Yes ____ No ____

You Asked For It; You Got It;
Now, Figure Out How To Make It Work!

LESSON 18-5: After the Music Stops *Approx. time: 2 classes*

Lesson overview:

With all of the software installations complete, this lesson focuses on the testing of the programs to determine if the everything was successful. Students will complete a requisition for the center recommending the purchase of one of the programs that they installed.

Students will demonstrate the ability to:

1. Use Help lines to troubleshoot when appropriate. (T/SW)
2. Perform simple configuration of software after installation. (T/SW)
3. Develop recommendations based on troubleshooting process and results. (F/PST)

Prerequisites: Lessons 18-1, 18-2, 18-3 and 18-4

Content required:

1) Types of simple configurations required after software installations:
   a) Shortcuts
   b) Desktop customization
2) Troubleshooting techniques:
   a) Uninstall and re-install, using different options
   b) Check specifications
   c) Re-read installation guide
3) Manufacturer's technical support:
   a) Telephone
   b) Online

Resources:

Web sites of software manufacturers
Installation guides for sample software

Materials checklist:

✓ Transparency and handout of Software Requisition Form (*JMOD18-5-1*) for each student

Equipment checklist:

✓ Overhead projector

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Teaching strategy:

Part 1 – Hands-On Computer Activity

1. Explain that the final phase of installation is to check to make sure that it was successful.
2. Allow time for the students to try out each of the programs that they installed (before performing the uninstall procedure).

Part 2 – Classroom Discussion

3. After trying out each of the programs, ask the students if they have encountered any problems. Discuss the problem of viruses which may have be contracted during the process. Identify with the students ways that viruses could be detected and deleted from the computer or floppy disks.
4. Continue to discuss possible remedies should they encounter a problem after installation. Make sure that they at least acknowledge the steps of:
    - Uninstall and re-install using different options
    - Check specifications
    - Re-configuration of the installed software
    - Re-read installation guide

   and any others that the students identify.
5. If these techniques don't work, ask the students what they think the best way would be to contact the technical support department of the software manufacturer. List on the board advantages or disadvantages to different means of contact. (For example, if you e-mail them, you have a written record of the correspondence, as opposed to just talking on the phone.)

HOT Activities:

1. Distribute the Software Requisition Form (*JMOD18-5-1*) and have students complete the form with their recommendation. Remind students to consider each factor of the installation process, as well as the other considerations of features, cost, future benefits to the center, etc.
2. Have students develop a checklist for determining if a software installation was successful and conduct a test to determine the most useful checklist.

Assessment Methods:

- Observation by instructor of student participation in group discussions of software troubleshooting techniques and virus detection methods.
- Assessment and written feedback on Software Requisition Form by instructor.
- Self-assessment by students of comfort level with multiple types of software installations.
- Evaluation of software installation checklists developed by students.

Instructor evaluation and comments for improvement:

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JMOD18-5-1

Job Corps Center

Software Requisition Form

Requisition No. 002945

DESCRIPTION OF ITEM, MANUFACTURER, AND ESTIMATED COST:

REASON/S FOR PURCHASE:

SIGNATURE and DATE: ____________________

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Module 19:
Designing and Developing New Programs

MODULE 19

Module 19 – Designing and Developing New Programs

Learner Outcomes:

Programming

1. Explain the purpose and function of computer programs.
2. Define the term "programming language" and identity and discuss the various categories of programming languages.
3. Explain, discuss, and identify object-oriented programming.
4. Discuss the programming languages that are commonly used today.
5. Choose and use the most effective computer program language for the intended project or task.
6. Explain, illustrate, and demonstrate the sequence, selection, and iteration control structures used in structured programming.
7. Use the control structure to solve a problem.
8. Apply in an organized manner the different steps in program development.
9. Design a program for a specific application or task.
10. Use an iterative design process in the development of a program.
11. Create the components of a computer program.
12. Test, debug, and document created programs.

Analysis/Research

13. Gather data to identify and evaluate programming software features.
14. Analyze, organize, and present research material.

Team Work

15. Work effectively with team members.
16. Coordinate tasks and the use of resources with other team members.

Prerequisites: Modules 17 and 18

Total Class Time: Approximately 20 hours Instructor's Note: This module includes many varieties of programming activities. Depending on your lab and the focus of your course, ***select only those that are appropriate and most meaningful for your students***. For example, if you have no programming tools, emphasize the research project; if you have students interested in multimedia, emphasize the exercises in HTML or Visual Basic; or, for very advanced students with serious interests in programming, emphasize Pascal and Fortran exercises.

Outside readings and other resources:

Computing for Engineers and Scientists with Fortran 77, McCracken and Salmon
Programmer's Guide to Visual Basic, Microsoft
BASIC, Microsoft
Pascal, Second Edition, Nell Dale and Chip Weems
Yahoo.com/Computers and Internet/Programming Languages

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Module 19 – Designing and Developing New Programs

Module overview:

Programming is one of the most popular professions in the computer industry. It is also one of the most misunderstood. Over the years computer programmers have earned the reputation of being geeks with pocket protectors and thick glasses who stay up late working on their computers, rarely changing out of their clothes and always eating pizza!

In fact programming is much like the process of translating words into a foreign language. The original words, however, are very precise instructions and it is t computer that will understand the translation of them. Developing these precise instructions is a very important part of the programming process but it is one that most of us do everyday -- anytime you are asked for directions to operate an appliance, to locate a destination, or to accomplish a simple task like baking cookies.

In this module, you will be introduced to the different steps required to produce these instructions and translations for computers. For your portfolio, you will prepare:

1. Written examples of problem statements and algorithms.
2. Designs of flowcharts.
3. A sample program coded in a programming language.
4. A complete testing process for a computer program.
5. A presentation on the features of a popular programming language.

Lesson Titles:

- 19-1 Introduction to Programming
- 19-2 Discovering Programming Languages
- 19-3 The Five Steps of Program Development: Problem Statements
- 19-4 The Five Steps of Program Development: Algorithms
- 19-5 The Five Steps of Program Development: Flow Charts from Algorithms
- 19-6 The Five Steps of Program Development: Coding
- 19-7 The Five Steps of Program Development: Testing and Debugging
- 19-8 Did You Document Everything?

Designing and Developing New Programs

LESSON 19-1: Introduction to Programming *Approx. time: 1 class*

Lesson overview:

The class discusses the concept of programming through real world activities. Students are then introduced to what the programming process is by creating a list of detailed instructions. Groups exchange the list of detailed instructions and each group tries out another group's list to see if it works. The activity could be done as a role play in front of the class.

Students will demonstrate the ability to:

1. Define the term "computer program" and "computer programming". (T/PRG)
2. Explain the purpose and function of computer programs. (T/PRG)
3. Create a set of instructions or steps to complete a task. (T/PRG)
4. Test the list of steps to show that they successfully complete the task. (T/PRG)
5. Research jobs in the programming field. (T/PRG)
6. Work effectively in small teams. (F/TW, ES-10)

Content Required:

1) What is programming?
2) Where, When, Why do we need programming?
3) Activities that relate programming to real life by using a logical sequencing of steps.

Resources:

- *Using TI-81 and TI-82 Calculators, Integrated Mathematics*, McDougal Littell
- *Advanced Mathematical Concepts*, Merrill

Materials checklist:

- ✓ Transparency and handout of Module Overview (JMOD19-Ovr) for each student
- ✓ Handout of Student Activity Sheet 1A (*JMOD19-1-1*) for each student
- ✓ Handout of Student Activity Sheet 1B (*JMOD19-1-2*) for each student
- ✓ Handout of Student Activity Sheet 1C (*JMOD19-1-3*) for each student
- ✓ Simple programs for the TI-82 or TI-83 programmable calculator for the HOT Activities

Equipment checklist:

- ✓ Computers connected to the Internet
- ✓ If available, a set of TI-82 or TI-83 programmable calculators
- ✓ Overhead projection unit

Teaching strategy:

Part 1 – Classroom Discussion

1. Introduce the module and distribute the overview (*JMOD19-Ovr*) to explain the purpose of the next lessons.
2. Discuss the question: "What is programming?" and find examples from the real world.
   - A series of instructions or steps to be completed in a designated order.
   - Telling a computer what you want it to do.
3. Identify and define the ways to communicate:
   - Language, words, or other way to communicate.
   - Special words called Code.
4. Where, When, Why do we need programming?
   - List examples of where programming is used: VCR, alarm clock/radio, dishwasher, daytimer, calculator, computer, games, Nintendo, toys, etc.

Part 2 – Student Activity

5. Choose activities for the students that relate programming to real life by using a logical sequencing of steps:
   - Assign groups and distribute the Student Activity Sheet 1A, Creating A Logical Sequence of Steps (*JMOD19-1-1*). Assign a different topic to each pair of students (some topics could be assigned twice). Ask each pair to write a complete numbered list of steps or instructions on how to complete the task.
   - Assign another topic to each group and ask students to list steps as outlined in the Student Activity Sheet 1A. Randomly assign a student to act out another student's instructions in front of the class. This would be a fun interdisciplinary activity combining technology and a role play (anything from pantomime to actual demonstrations).
   - Debrief on what was learned and observed during activity.

Part 3 – Class Discussion

6. Discuss with students the different applications of programming and the roles of programmers in business. Ask student for examples and list these on the board.

HOT Activities:

1. If available, distribute a programmable calculator to each student and have students write programs defined in the steps using the Student Activity Sheet 1B (*JMOD19-1-2*). Have students pick one of the tasks and write a complete numbered list of steps or instructions on how to complete it.
2. Explain each of the diagrams displayed in the "Basic Structures of Programming Languages" on the Student Activity Sheet 1C (*JMOD19-1-3*). Have students take the results from the Student Activity Sheets 1A and/or 1B and create a picture for the sequence of steps similar to one of the formats.

3. Using the Internet, have students research different kinds of programming jobs that are available and print out information about one job to share with the class.

Assessment methods:

- Participation in classroom discussion.
- Ability to apply logical thinking to program design.
- Results of the job search assignment.
- Observe teamwork and debriefing.

Instructor evaluation and comments for improvement:

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Student Activity Sheet 1A
Lesson 19-1

CREATING A LOGICAL SEQUENCE OF STEPS

Name______________________________________ Date_____________

Write a complete numbered list of step-by-step instructions for every action taken to complete one of the following tasks.

Your instructions must include:
- A written list of each step (don't miss anything)
- A drawing sketch of each step

Choices:
- Find the volume of the classroom
- Get dressed in the morning, including tying your shoes
- Plan a birthday party
- Decorate a room for a special occasion
- Open a combination lock

Task chosen:____

Instructions and Sketch:

	Instructions	**Sketch**
1.		
2		
3		

(Continue on the back of the page.)

Student Activity Sheet 1B
Lesson 19-1

BEGINNING TO USE PROGRAMMING LANGUAGE CODE

1. Pick one of the following topics and write a complete numbered list of steps (maximum number of steps to do the job) or instructions on how to:
   - Use the rules for the Order of Operations to calculate: (9*(3+9))/9 + 2^3*2
   - Find your average GPA for this session if your grades in all of your classes are A, B, C, D, E or any combination you choose (except all one letter; A=4, B=3, C=2, D=1, E=0)
   - Find the area of a triangle, with a base of 10 inches and height of 3 inches.
   - Find the total square footage of your classroom.

2. With a programmable calculator:
   - Using the Order of Operations, calculate: 9*(3+9))/9 + 2^3*2 first without the calculator and then with the calculator. (Does everyone get the same answer both ways?)
   - Find the area of a triangle: (the calculator puts a colon automatically on the program line, so you don't need to number it.)

```
Prompt, B, H
.5*B*H->A
Disp "AREA =", A
```

If you don't know the KEYSTROKES for the TI-83 Calculator for this program, here they are:

COMMAND	KEYSTROKES
(To Start)	PRGM, (use arrow over to) NEW, ENTER, and put in a name, ENTER
Prompt, B, H	PRGM, I/O,2, ALPHA B, ALPHA H, ENTER
.5*B*H->A	.5 x ALPHA B x ALPHA H STO->ALPHA A
Disp "AREA =", A	PRGM, I/O, 3, ALPHA +, ALPHA A, ALPHA R, ALPHA E, ALPHA A, 2nd MATH, 1, comma ("," is above 7), ALPHA A

- Find your average GPA for the semester if your grades in 6 classes are A, B, C, D, E, A, or any combination you choose (except all one letter; A=4, B=3, C=2, D=1, E=0)

3. A BASIC program to find the average of the numbers 23, 27, 42, 51, 33, 39 is as follows:

```
10 READ A,B,C,D,E,F
20 PRINT (A+B+C+D+E+F)/6
30 DATA 23, 27, 42,51,33,39
40 END
```

- This BASIC program translates into the programmable calculator as follows (the calculator puts a colon automatically on the program line so you don't need to number it):

```
Prompt A,B,C,D,E,F
(A+B+C+D+E+F)/6->G

Disp "AVERAGE=", G
```

- What is different in this next program:

```
10 REM  It's OK to  put the DATA statement before the READ
20 DATA 23, 27, 42,51,33,39
30 READ A,B,C,D,E,F
40 PRINT (A+B+C+D+E+F)/6
50 END
```

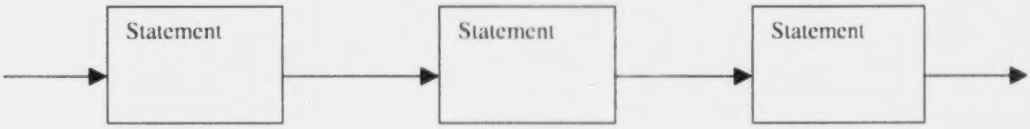
- First guess, and then find the output of the following program by programming the calculator:

```
10 LET N=3
20 LET Y=5
30 LET Y= Y+7
40 LET X=Y+N
50 PRINT X
60 END
```

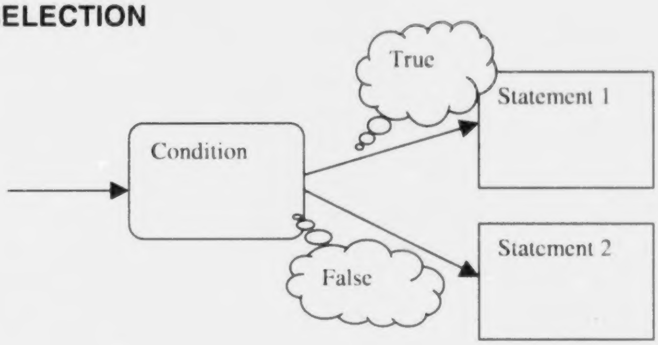
Student Activity Sheet 1C
Lesson 19-1

1. Take the results from both Student Activity Sheets and create a picture for the sequence of steps similar to one of the following formats of "Basic Structures of Programming Languages"

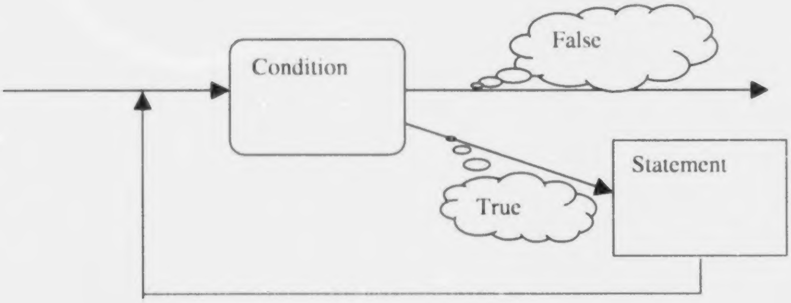
SEQUENCE


Statement
Statement
Statement

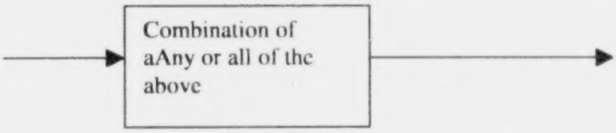
SELECTION


True
Statement 1
Condition
Statement 2
False

LOOP


Condition
False
Statement
True

PROCEDURE


Combination of aAny or all of the above

Designing and Developing New Programs

LESSON 19-2: Discovering Programming Languages *Approx. time: 1 class*

Lesson overview:
It is a good idea to have the students sign an agreement about the proper use of the computer lab and of the Internet. If it is possible, make computer disks available with each student's name and keep them in the lab. Students are introduced to the Programming Software Analysis Project in which, in groups, they will thoroughly investigate a programming language. Class work is designed to teach the process of programming by hands-on activities. Remember, HOT activities throughout this module are available for more in-depth work on defining the process of programming and should be used by the instructor as needed.

Students will demonstrate the ability to:
1. Write simple programs using different programming languages and tools. (T/PRG)
2. Read and understand the steps in simple programs. (T/PRG, ES-4)
3. Explain the basic features of main programming languages. (T/PRG)
4. Conduct a search and organize information. (F/RES)

Prerequisites: Lesson 19-1

Content Required:
1) Specific lab rules
2) Signed agreements for Internet and computer lab use
3) Introduction of Programming Software Analysis Project

Resources:
Microsoft Excel

Materials checklist:
- ✓ Handout of Computer Lab Rules (*JMOD19-2-1*) for each student
- ✓ Handout of Project Requirements for Analysis of Programming Software (*JMOD19-2-2*) for each student
- ✓ Handout of Student Activity Sheet 2A (*JMOD19-2-3*) for each student
- ✓ Handout of Student Activity Sheet 2B (*JMOD19-2-4*) for each student
- ✓ Handout of IT NOTES (*JMOD19-2-5*) for each student
- ✓ Graph paper and colored pencils, if available
- ✓ Evaluation forms for project (*JMOD19-2-6*) when required

Equipment checklist:
- ✓ Computers connected to the Internet 70.1
- ✓ Student disks

Teaching strategy:

Part 1 – Pre-class Preparation by Instructor

1. Identify all the current popular programming languages and develop a list for the students to choose from for the projects.
2. Prepare a schedule for when the project results can be presented to the class.

Part 2 – Classroom Discussion

3. Discuss specific lab behavior and the purpose, after distributing the Computer Lab Rules handout (*JMOD19-2-1*). Have students sign Agreements for Internet and Computer Lab use.
4. Distribute the handout of the Project Requirements for the Analysis of Programming Software (*JMOD19-2-2*). Explain the roles of the students and have them read through the requirements and clarify their responsibilities. Display the list of choices for programming software and assign or allow the student groups to choose one program.
5. After all of the choices are made, complete the schedule of presentations and post in the classroom. Allow time in class for students to research their topics.
6. Distribute the Evaluation Forms for the project (*JMOD19-2-6*) now or when the projects are turned in.

Part 3 – Hands-On Computer Activity

7. Distribute to each student the Student Activity Sheet 2A (*JMOD19-2-3*), graph paper and colored pencils, if available. Explain that the purpose of this activity is to practice the process of programming and instruct the students to complete each exercise included in the activity.
8. Monitor the progress of the students and offer assistance whenever possible.

HOT Activities:

1. Distribute the Student Activity Sheet 2B (*JMOD19-2-4*) and have students continue working on the development of computer instructions.
2. The IT Notes (*JMOD19-2-5*) provide information on the different categories of programming languages and programming language terminology. Distribute this handout and have students read the content. Ask students to prepare a list of twenty questions on concepts they need clarified. Conclude the activity by conducting a classroom discussion that attempts to answer all the student questions.

Assessment methods:

- Assessment by instructor of application of math and logical thinking to the design of a program.
- Instructor evaluation of student ability to read and interpret technical documentation.

- Student and instructor assessment of results and thoroughness of searches on programming languages.
- Instructor assessment and provision of written feedback for each activity sheet exercise.

Instructor evaluation and comments for improvement:

Computer Lab Rules
Lesson 19-2

1. Signed Internet Agreement on file.
2. NO FOOD OR DRINK.
3. NO horsing around.
4. NO vandalizing equipment, including removing any parts of equipment.

See attached Internet Acceptable Use Policy.

Analysis of Programming Software
Project Requirements
Lesson 19-2

Each group of 3 students will be assigned a different programming language to research history, examples, type, and use. Students will present their findings to the class. The schedule for presentation times will be posted after all assignments have been made.

The research may be started on the Internet and supplemented with books.

- A search on the Internet in Yahoo would begin by clicking on "Computers and Internet: Programming Languages" and then picking the Language students have chosen.

- Students must save information on their disks and print out a hard copy display of the information to be copied for all students.

- Presentations and printed information may include answers to the following questions and other information (see IT Notes):

  1. Is this a procedural or a declarative language?
  2. Is this a high-level or a low-level language?
  3. Is this a compiled language or an interpreted language?
  4. Is this an object-oriented language?
  5. Is this an event-driven language?
  6. When was the language developed?
  7. For what purpose was the language developed?
  8. Who is the author of the language?
  9. Is the language typically used on micro, mini, or mainframe computers?
  10. Which companies use this program or produce software using the language?
  11. What software was developed using this programming language?

Student Activity Sheet 2A
Lesson 19-2

1. Write out the sequence to perform the operations in a string of calculations such as:

   5 – 2(10 –3^2) +24/8 - 4

   For the correct answer, review the Order of Operations: PEMDAS
   - Parentheses
   - Exponents
   - Multiplication and division in the order from left to right
   - Addition and subtraction in the order from left to right.

   PEMDAS rules are used in spreadsheets and programming
   - BASIC notation
     * is times
     / is division
     ^ is raising to power
     + addition
     - subtraction

2. Create a spreadsheet that displays the information gathered above.

3. Use a topic from the Student Activity Sheet 1A (*JMOD19-1-1*) to write out the following information:
   - Draw a diagram of what you want the spreadsheet to look like:
     Show how you are going to display all the information.
     Show titles.
     Show headings for all columns and rows.
   - Show the exact steps that you want the spreadsheet to calculate.
   - Create the spreadsheet to complete the task.
   - Use formulas to do calculations.
   - Test the results to determine if they are correct.
   - Save spreadsheet to disk.

4. BASIC exercise: What does each program do? What is the output for each?

   Example #1

```
10 READ X,Y
20 DATA 4,2
30 LET A = 5 * Y + 20/X
40 PRINT A
50 END
RUN
```

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Example #2

```
10 REM FOLDING PAPER PROBLEM
20  PRINT "TIMES FOLDED", "HEIGHT IN       METERS
25  PRINT
30  LET K = 1
40  LET S = 2
50  LET K = K + 1
60  LET S = S * 2
70  PRINT K, S* .0005
80  IF S * .0005 < 1000 THEN 50
90  END
```

5. QuickBasic exercise: Write out what you think each step does next to the line.

```
REM  program by me
CLS
COLOR 2
PRINT "MY FIRST PROGRAM!"
SOUND   111, 10
SCREEN 12
PSET (10, 15), 7
END
```

```
REM  A FANCY PROGRAM
CLS
SCREEN 12
COLOR  1
LINE (0,0) - (640, 480)
LINE (300, 100) - (400,200), 5, BF
COLOR 8
CIRCLE (100,200), 50
END
```

6. On the graph paper provided:

   1. Draw a picture using the instructions in the following program.

```
PI = 3.14.593
SCREEN 1   ' medium res. graphics
COLOR 0, 1 ' black background, palette 1
' two circles in color 1 (cyan)
CIRCLE (120, 50) , 10, 1
CIRCLE (200, 50) , 10, 1
' two horizontal ellipses
CIRCLE (120, 50) , 30,,,,5/18
CIRCLE (200, 50) , 30, ,,,,5/18
' arc in color 2 (magenta)
CIRCLE (160, 0) , 150, 2, 1.3 * PI,  1.7 *PI
' arc, one side connected to center
CIRCLE (160, 52) , 50, ,, 1.4 * PI,  -1.6 *PI
```

Student Activity Sheet 2B
Lesson 19-2

Name____Date_______________

1. Write a program to find the squares of 15, 25, and 35 in BASIC and Pascal.

2. Write a program which finds the square root of a number. If the number is negative, instruct the computer to print NO REAL SQUARE ROOT.

3. Write the output of each of the following programs.

```
10 LET A = 1
20 PRINT A,A^3
30 LET A = A+2
40 IF A < 7 THEN 20
50 END
```

```
10 READ X
20 IF X > 4 THEN 70
30 LET Y = X^2
40 PRINT X,Y
50 GO TO 10
60 DATA 1,2,3,4,5,6
70 END
```

IT NOTES

Lesson 19-2

1. Categories of Programming Languages

Machine Language

- A low-level language in binary code that the computer can execute directly.

Low-Level Languages

- Assembly Language
- Instructions for the lowest level of the computer system, the hardware level, such as the processor, registers, and RAM locations; and instructions for the system software such as compilers, operating systems, and device drivers.

High-Level Languages

- Instructions that are more like human language, but must be translated into instructions the computer can execute. Therefore, a high-level language must be compiled or interpreted.
- Which languages are high-level languages?

Fourth-Generation Languages

- Machine, is first level; assembly is second level;
- High-level language is the third level.
- Non-procedural languages, database query languages, for example.
- Results oriented. A fourth-generation query might be stated as: "LIST COUNTRY MUSIC TOTAL SALES BY REGION".

A Fifth-Generation is a natural language version of the same query: "TELL ME THE NAMES OF EACH COUNTY MUSIC CD SOLD AND THE TOTAL SALES FOR EACH REGION."

Application Generators

- Programs that produce source-language programs, such as BASIC or COBOL, based on input, output, and processing specifications.

Object-oriented Programming

- Uses objects that the program manipulates, like buttons, dialog box windows, etc.
- Any programmer can use these objects without having to recreate the code.
- Components are prewritten objects that programmers can customize and add to their own programs. You can find them in the *Visual Basic Programmer's Journal*.

2. *Event-Driven vs. Traditional Programming*

- Traditional programming is a "procedural" process in which the code is the application. Execution starts with the first line and follows a defined pathway through the program, calling procedures as needed.
- Event-driven programs are applications in which the user chooses prescribed objects or events that have been placed in a program, and then the system executes the event procedures in the order that the user chooses the event procedure. The code makes assumptions about "the state of the world" when it executes. For example, changing the Text Property of a text box causes that text box's Change Event to occur. When an object recognizes that an event has occurred, it automatically invokes the even procedure with the name that corresponds to the event. The name establishes an association between the object and the code, making event procedures attached to forms and controls.

3. *Programming Languages terminology*

Syntax

- syntax rules, or grammar of the programming language
- syntax error: misspelling a command work, leaving out required punctuation, or typing the command words out of order

Program code

- program language procedures and controls to express an algorithm

Compiler

- translates a program written in a high-level language (source code) into low-level instructions (object code) before the program is executed.

Interpreter

- reads each instruction step and converts it into a machine language instruction, which the computer executes.

4. *Popular Programming Languages Used Today:*

BASIC
Visual Basic
COBOL
C
C++
FORTRAN
Pascal
Ada
Modula 2
HTML
JAVA

Analysis of Programming Software Presentation Evaluation
Lesson 19-2

Evaluator Name____________________________________Date_______________

Presenter(s)____

Tile of Presentation____

1. Please circle the numeral which best represents your assessment of the presenter(s) and his/her/their performance:

	Poor.................Great		Poor.................Great
Preparation:	1----2----3----4----5	Coding:	1----2----3----4----5
Discussion and pace:	1----2----3----4----5	Over all design:	1----2----3----4----5
Compiles and is free of errors	1----2----3----4----5	Meets project criteria	1----2----3----4----5
Easy to use and incorporates good logical structure	1----2----3----4----5	Meets client needs and issues	1----2----3----4----5
Effective and correct use of syntax and style	1----2----3----4----5	Provides appropriate documentation	1----2----3----4----5

Total Points:________________

2. Write complete sentences and paragraphs to answer the following questions:

   A. What did you learn from this presentation?

   B. Evaluate and assess the effectiveness of the design, development, and presentation process, and make recommendations for improvements. (Please be wordy and specific.)

   C. Other comments:

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Designing and Developing New Programs

LESSON 19-3: The Five Steps of Computer Program Development : Problem Statements *Approx. time: 1 class*

Lesson overview:

To begin to understand the five steps to programming development, students are involved in a series of activities to learn how important it is to use explicit and precise language. Since programming is language using symbols, students need to develop and understand how to write concise and accurate problem statements as the first step in programming development. The problem statements must specify assumptions about something, define the problem, define the scope of the problem, and indicate the goal and point to the solution. All these aspects of writing problem statements are explored in detail.

Students will demonstrate the ability to:

1. Explain the purpose of writing precise problems statements as a first step to program development. (T/PRG)
2. Write a problem statement. (T/PRG)
3. Read and interpret the steps in simple written programs. (T/PRG)
4. Compare programming language styles. (T/PRG)
5. Work effectively in groups. (F/TW, ES-10)

Prerequisites: Lessons 19-1 and 19-2

Content Required:

1) First step in computer program development:
    a) Defining "Problem Statement"
    b) Writing "Problem Statements"

Resources:

As many examples as available of different programming languages

Materials checklist:

- ✓ Completed Student Activity Sheet 2B (*JMOD19-2-4)*
- ✓ Graph paper for each student
- ✓ Handout of Student Activity Sheet 3A (*JMOD19-3-1*) for each student
- ✓ Handout of Student Activity Sheet 3B (*JMOD19-3-2*) for each student

Equipment checklist:

- ✓ Computers connected to the Internet
- ✓ Computer and computer display over head projector.
- ✓ Student disks

Teaching strategy:

Part 1 – Classroom Discussion

1. Review with the class the questions on programming languages generated by the students from reading the IT Notes in Lesson 19-2.
2. Review the progress of research on programming languages for the group project and provide time in class to complete as needed.

Part 2 – Group Activity

3. Rearrange groups if desired, or leave in same groups. Introduce the following activities and have the students begin.
   - **Activity #1: Write a letter to your friend about what you did this last year.**
   - **Activity #2: Write a list of all the requests that your friends ask of you during a day, a week, and on the weekend--be specific, verbose, detailed, and long-winded.**
     - Emphasize the importance of obeying the following rules during this activity:
       1. Call on your random access memory—whatever occurs to you to say as you think about the activity—and write it down in the order that it occurs to you.
       2. Don't be concerned about the structure of how the paragraphs go together.
       3. Don't worry about grammar, etc.
4. Discuss the results after Activity #1 and #2 are completed.
   - Read some of the students' responses out loud to the class, or have students exchange responses and read quietly.
   - Think of questions to ask while reading responses.
   - Was the chronological sequence of events out of order?
   - Was the logical sequence of events out of order?
   - Were the commands unclear?
   - Does your life appear chaotic and random?
   - What other questions do the activities suggest to ask?
5. Define and discuss what a "Problem Statement" is and how it relates to computer programming.
   - Make a list defining "Problem Statement" on the overhead or white/blackboard. Ask students to take notes and answer the question "What does the Problem Statement do?":
     1. Specifies assumptions about something
     2. Defines a problem
     3. Defines the scope of a problem
     4. Identifies known information
     5. Indicates the goal of the problem
     6. Points to a solution to the problem

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HOT Activities:

1. Assign students to new groups and hand out Student Activity Sheet 3A (*JMOD19-3-1*). Have students write problem statements for each of the tasks listed in the activity.
2. Write problem statements for simple programs, as described in Student Activity Sheet 3B (*JMOD19-3-2*).

Assessment methods:

- Instructor assessment of problem statements for logic and relevancy.
- Observation by instructor of class discussion.
- Evaluation of quality of research.
- Instructor's observation of students' ability to complete tasks in timely basis.

Instructor evaluation and comments for improvement:

Student Activity Sheet 3A
Lesson 19-3

Name____**Date**__________

Write problem statements for each of the following:

1. Your favorite recipe.
2. Instructions for doing your laundry.
3. Refrigerator-defrosting instructions.
4. Finding the cost to re-carpet your dorm room.
5. Finding a baseball player's batting average (=Hits/(TimesAtBat – Walks)). (Use no spacing if you are going to do the HOT Activity with this.)
6. For finding how much you will pay in interest, and what your payment amount will be, if you borrow $15,000 at 8.5% interest, and have to pay it back in five years.
7. Computing the surface area and volume of a sphere or of the classroom.
8. Planning and hosting the best party at the center.

Student Activity Sheet 3B
Lesson 19-3

A. On the graph paper provided:
  1. Draw a picture of the following code.
  2. Write out a list of steps in English for the code.
  3. Write a problem statement for the code.

```
PI = 3.14.593
SCREEN 1   ' medium res. graphics
COLOR 0, 1 ' black background, palette 1
' two circles in color 1 (cyan)
CIRCLE (120, 50) , 10, 1
CIRCLE (200, 50) , 10, 1
' two horizontal ellipses
CIRCLE (120, 50) , 30,,,,5/18
CIRCLE (200, 50) , 30, ,,,,5/18
' arc in color 2 (magenta)
CIRCLE (160, 0) , 150, 2, 1.3 * PI,  1.7 *PI
' arc, one side connected to center
CIRCLE (160, 52) , 50, ,, 1.4 * PI,  -1.6 *PI
```

B. On the other side of the graph paper:
  1. Draw a picture that has a minimum of 10 points, 4 lines, 4 boxes filled and unfilled, and 3 circles of different sizes, all with different colors, and throw in some bells and whistles, too.
  2. Then write a Quick-Basic program that should draw the same thing. The following Q-Basic facts should make it possible to do:

- The list of numbers corresponding with COLOR:
  Black 0, Blue 1, Green 2, Cyan 3, Red 4, Magenta 5, Brown 6, White 7, Grey 8, Light Blue 9, Light Green 10, Light Cyan 11, Light Red 12, Light Magenta 13, Yellow 14, Very Bright White 15.

- The numbers corresponding to SOUND 111, 10:
  The first number after SOUND is the frequency, which is a number from 37 (very low) to 32767 (way too high for computers). The second number is how long the sound lasts in seconds.

- PSET (10,15) 7 means the pixel on the screen that you turn on at the location (x,y) with a color. The location of (x,y) is a little different from the mathematics graph. The origin (0,0) starts in the upper left corner, x is the first number in (x,y) and increases from left to right horizontally. The second number y in (x,y) increases from top to bottom vertically.

Designing and Developing New Programs

LESSON 19-4: The Five Steps of Computer Program Development : Algorithms

Approx. time: 2 classes

Lesson overview:

Students continue to work with their written problem statements from the last lesson to write the algorithms to solve the problems in this lesson. Students will also practice the process of debugging by a hands-on group activity. Each group will try to "execute" a different group's set of algorithms, writing down the description and reason for the success or failure of each step, and whether they reached the appropriate solution or goal.

Students will demonstrate the ability to:

1. Write algorithms. (T/PRG)
2. Apply effectively principles of program design. (T/PRG)
3. Conduct a simple debugging exercise of a program. (T/PRG)
4. Use effective communication skills when interacting in a team environment. (F/TW)

Content Required:

1) Writing algorithms
2) Testing and debugging algorithms.

Materials checklist:

- ✓ Handout of Student Activity Sheet 4A (*JMOD19-4-1*) for all students
- ✓ Handout of Student Activity Sheet 4B (*JMOD19-4-2*) for all students
- ✓ Handout of Student Activity Sheet 4C (*JMOD19-4-3*) for all students
- ✓ Handout of Student Activity Sheet 4D (*JMOD19-4-4*) for all students
- ✓ Graph paper for each student

Equipment checklist:

- ✓ Computers connected to the Internet
- ✓ Computer and computer display over head projector.
- ✓ Student disks

Teaching strategy:

Part 1 - Introductory Discussion

1. Review the progress of research on programming languages for the group project and provide time in class to complete as needed.
2. Discuss with the class what an algorithm is and give a few examples. Ask students to give examples of their own based on the definition of an algorithm.

Part 2 – Group Activity

1. Instruct the students to write a complete list of steps to reach a solution for each of the problem statements in Student Activity Sheet 4A (*JMOD19-4-1*). Students may work on this activity together in groups, but they must individually write their own steps to reach a solution on their own paper and turn it in.
2. Collect papers, exchange group's work, and ask each student to try out another student's instructions.
3. After students try out a set of instructions, ask them to write out all the problems and successes they encountered on that student's paper and initial their response. You may need to remind them to take this seriously and be helpful and constructive.
4. Collect the activity sheets at the end of the exercise.

Part 3 – Another Day, Another Try on Writing Algorithms

5. Now students should really know what elaborate, detailed, precise, complete steps should be, because in this activity students will plan the complete, ultimate party of the year! Put students in groups and instruct them to complete the exercise in Student Activity Sheet 4B (*JMOD19-4-2*).

HOT Activities:

1. To investigate a problem statement, algorithm, and programming code, use the Student Activity Sheet 4C (*JMOD19-4-3*). Have students work in groups to analyze the example which uses Fortran.
2. For additional practice in writing problem statements, distribute the Student Activity Sheet 4D (*JMOD19-4-4*) and instruct the students to complete this exercise.

Assessment methods:

- Observation by instructor of group activities.
- Assessment of students' ability to organize work.
- Evaluation of the problem statements and algorithms from each of the handouts.

Instructor evaluation and comments for improvement:

Student Activity Sheet 4A
Lesson 19-4

Name______________________________ **Date**____________

Write a complete list of steps to reach a solution for the statement you chose:

1. Your favorite recipe.
2. Instructions for doing your laundry.
3. Refrigerator-defrosting instructions.
4. Finding the cost to re-carpet your dorm room.
5. Finding a baseball player's batting average (=Hits/(TimesAtBat – Walks)). (Use no spacing if you are going to do the HOT Activity with this.)
6. Finding how much you will pay in interest and what your payment amount will be if you borrow $15,000 at 8.5% interest, and have to pay it back in five years.
7. Computing the surface area and volume of a sphere or of the classroom.
8. Planning and hosting the best party at the center.

Student Activity Sheet 4B
Lesson 19-4

Complete the following activity in your group:

We will apply the computer program design and development process to the planning of a large, incredible party:

1. Write a problem statement.
2. Write a complete detailed sequence of steps.
3. Create a hierarchical graphic and text diagram of your plans.
4. Create a timeline for all parts of your graphic diagram and write a sequence of steps.
5. Document everything.
6. Run a test to see if it works. (Did you forget anything?)

Student Activity Sheet 4C
Lesson 19-4

Read and discuss the following problem in your groups and then do the activity:

1. Example of a programming language: **Fortran:**

A. **Define the problem:**

- Compute the surface area and the volume of a sphere.

B. **Write an algorithm:**

1. Request the radius of interest
2. Read this value and name it RADIUS
3. Define the value of PI as 22/7
4. Calculate the surface area as 4PI times the radius squared.
5. Calculate the column as 4/3 times PI times the radius cubed.
6. Print the radius, the surface area, and the volume.

C. **The Fortran code:**

```
C2345678910
C  Ask for the radius to use
     WRITE (6,*) "ENTER RADIUS TO USE'
C  Read input and name it RADIUS
     READ (5,*) RADIUS
C  Define PI as 22/7
     PI = 22.0/7.0
C  Calculate surface area and volume
     SA = 4.0*PI*RADIUS**2.0
     VOL = SA*RADIUS/3.0
C  Print the radius, the surface area and the volume
     WRITE (6,*) RADIUS, SA, VOL
     STOP
     END
```

Group Activity: Write out complete answers and responses to the following:

- **For Part A: The Problem Statement**
  1. Is the Problem Statement explicit, precise, and complete? Why?
  2. Does the Problem Statement identify known information? Write down what you need to know.
  3. Does the Problem Statement indicate the solution to the problem? How?
  4. Write down something that indicates the goal of the problem.

- **For Part B, The Algorithm:**
    1. Write an explanation and reason for each step.
    2. Add any steps that you think are left out.

- **For Part C, The Code:**
    - Read the code and number the step that is associated with each step in Part B. The following is information to help you in your task:
        - The first instruction prints a string of text by enclosing it in single quotes and using this for the list following the WRITE statement
        - All values have decimal points since they are associated with real, variable names.
        - The ** is used to signify exponentiation.
        - The volume equation modified the area equation and did not use the entire volume equation.

- **For Part D, Write a conclusion:** Does the program do what it is supposed to do? How do you know? Write out what you can do to find out if it works correctly and then try it. Show all the steps. Did it work?

Student Activity Sheet 4D
Lesson 19-4

A. On the graph paper provided:

1. Draw a picture of the following code.
2. Write out a list of steps in English for the code.
3. Write a problem statement for the code.

```
PI = 3.14.593
SCREEN 1   ' medium res. graphics
COLOR 0, 1 ' black background, palette 1
' two circles in color 1 (cyan)
CIRCLE (120, 50) , 10, 1
CIRCLE (200, 50) , 10, 1
' two horizontal ellipses
CIRCLE (120, 50) , 30,,,,5/18
CIRCLE (200, 50) , 30, ,,,,5/18
' arc in color 2 (magenta)
CIRCLE (160, 0) , 150, 2, 1.3 * PI,  1.7 *PI
' arc, one side connected to center
CIRCLE (160, 52) , 50, ,, 1.4 * PI,  -1.6 *PI
```

Designing and Developing New Programs

LESSON 19-5: The Five Steps of Computer Program Development : Flow Charts from Algorithms

Approx. time: 1 class

Lesson overview:

Taking the algorithms written during the previous lessons, students create flow charts for each. Students begin brainstorming ideas--writing a problem definition, statement, algorithms, and creating flow charts.

As you have watched students work in groups previously in this class, you will know where the needed areas for improvement are, and where guided instruction in the group process would be helpful at this point. Today's activity could be used to reassign groups; to get students out of their ruts and comfort zones; to encourage students to think about how to be a more effective and productive contributor; and how to work more positively with new people.

Students will demonstrate the ability to:

1. Define a problem statement for a real life situation. (T/PRG)
2. Create flow charts from algorithms. (T/PRG)
3. Analyze and synthesize information. (F/ANL)
4. Work together to produce solutions for a project. (F/TW, ES-10)

Content Required:

1) Students create flow charts from algorithms.
2) In groups, students brainstorm ideas and write problem definitions for real life scenarios.

Materials checklist:

- ✓ Algorithms from Student Activity Sheets 4C and 4D.
- ✓ Transparency and handout of IT NOTES (*JMOD19-5-5*) with Flow Chart Symbols for each student
- ✓ Handout of Student Activity Sheet 5A (*JMOD19-5-1*) for each student
- ✓ Handout of Student Activity Sheet 5B (*JMOD19-5-2*) for each student
- ✓ Handout of Student Activity Sheet 5C (*JMOD19-5-3*) for each student
- ✓ Handout of Student Activity Sheet 5D (*JMOD19-5-4*) for each student

Equipment checklist:

- ✓ Computer and computer display over head projector.
- ✓ Student disks
- ✓ Overhead projector

Teaching strategy:

Part 1 – Class Activity and Discussion

1. Distribute the IT Notes (*JMOD19-5-5*) and review the purpose of flowcharts by showing the examples of the traditional symbols used in a flowchart.
2. Distribute the Student Activity Sheet 5A (*JMOD19-5-1*). Working in groups, ask students to create complete flow charts for each of the situations in Part 1 and then complete Part 2.
3. Using the Student Activity Sheet 5B (*JMOD19-5-2*), introduce a real life situation found at the center.
4. Distribute Student Activity Sheet 5C (*JMOD19-5-3*) and thoroughly discuss in detail all the steps in developing computer programs.

Part 2 – Student Work

5. Collect each group's results for Part 2 of the Student Activity Sheet 5A and have students in one group trade with another group, which will create the flow charts. Ask students to draw a line across the paper they received, writing their names and groups and then drawing the flow charts.

HOT Activities

1. Using the IT Notes and the algorithms written for Student Activity Sheets 4C and 4D in Lesson 19-4, have students create complete flow charts for each problem.
2. Instruct students to develop a flowchart for the real life situation at the center used in Student Activity Sheet 5B.
3. Assign students into different groups of 3 or 4 to write problem statements, algorithms, and flow charts for each of the programs in Student Activity Sheet 5D (*JMOD19-5-4*).

Assessment methods:

- Instructor and students assessment of students' ability to apply logic to the design of flowcharts.
- Evaluation of readability and organized layout of flowchart prepared by students.
- Assessment by instructor of different handouts.

Instructor evaluation and comments for improvement:

Student Activity Sheet 5A
Lesson 19-5

Part 1

Create flow charts for each of the following situations:

1. When I get up in the morning, I first get dressed; then turn on my CD player and listen to music; then I brush my teeth, comb my hair, read my schedule; and I then walk to my first class.
2. Right after dinner, I will start my chores in the dorm if my friend doesn't call. If my friend calls, I will talk on the phone. Either way, I will wash my hair after I talk on the phone or do my dorm chores.
3. If I get over a 3.0 GPA I will have a better chance of getting a good job, but if I don't I will just be like any other person looking for a job.
4. If it is not raining this afternoon, I will go play tennis. If it rains, I will go work out in the gym. After that I will do my chores at the dorm and then go to the cafeteria for dinner.
5. The center's new grade point average requirement says that one's grade average must be greater than or equal to 70% (a C) in both core classes and overall to graduate. If it isn't, one will have to repeat classes and get higher grades to raise one's grade point average. What will happen next if the GPA is still too low? Continue to retake classes until it's high enough?
6. When can you vote? While you are still under the age of 18, you cannot vote in a public election. When you turn 18 you are considered an adult and have the privilege of voting. You must fulfill all the conditions to apply to vote and to be given the right to vote. Then you must become informed on all the issues and finally get yourself to the assigned voting poll and vote!

Part 2

In your assigned group, write two scenarios to be developed into flow charts. Be sure that each member of the group places his or her name and group name at the top of the paper.

Student Activity Sheet 5B
Lesson 19-5

The Job Corps center is constantly interested in the needs of its students but would like to computerize the information for areas such as:

Dietary requirements
Recreational preferences
Career opportunities available
Networking contacts outside the center

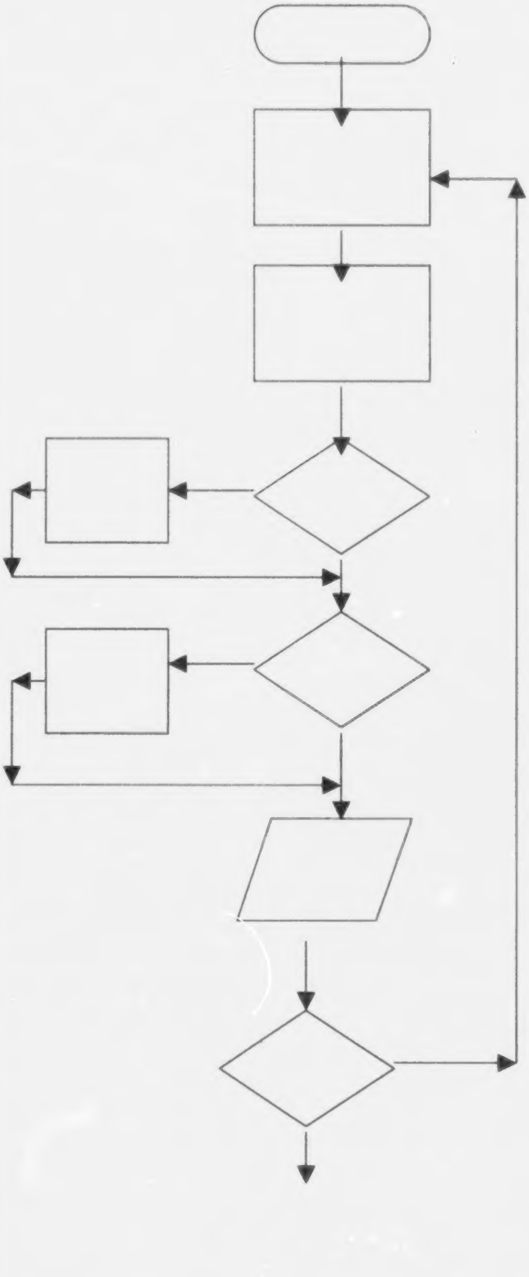
Each group is assigned a specific topic and must:

1. Write a Problem Statement
2. Write An Algorithm
3. Design a Flow Chart that performs the task.
4. Write the code in the programming language that you have researched.

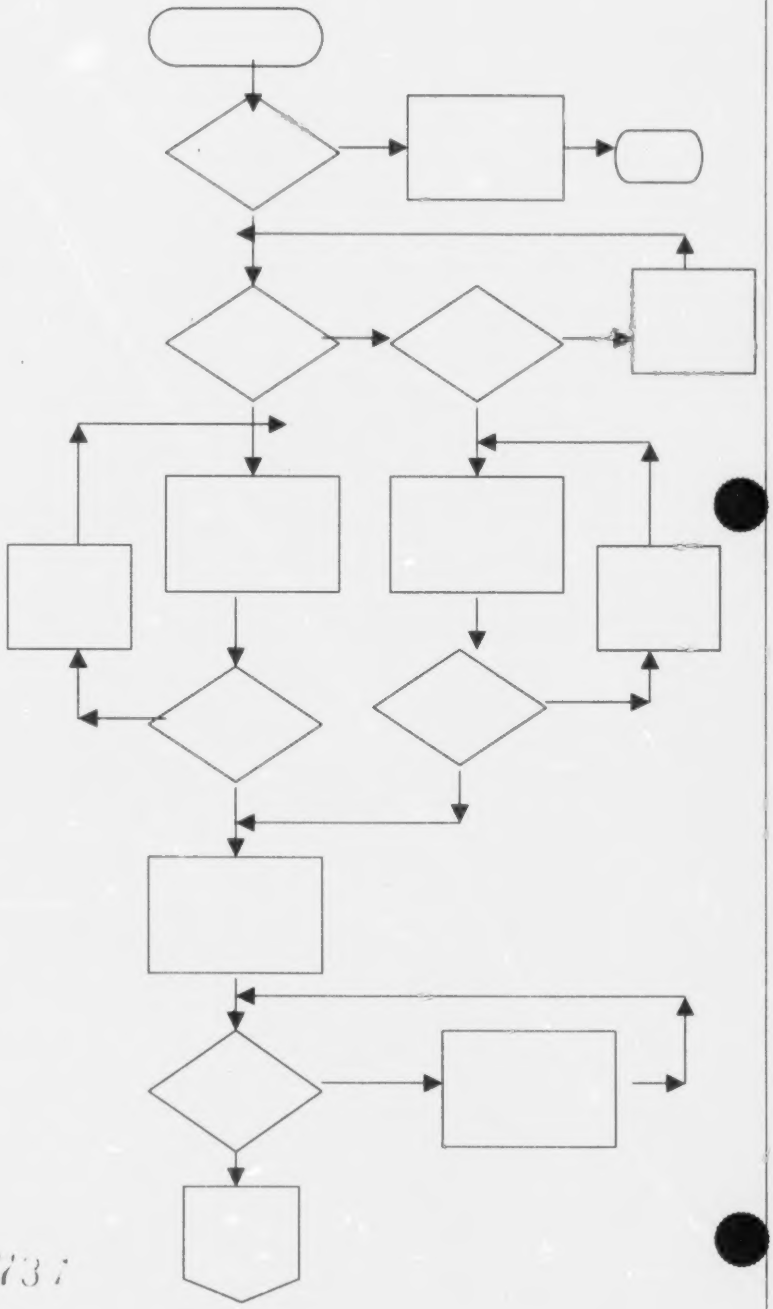
Student Activity Sheet 5C
Lesson 19-5

Write algorithms and problem statements for the following flow charts (be creative!):

Flow Chart #1:



Flow Chart #2:



Student Activity Sheet 5D
Lesson 19-5

In groups of 3 or 4, write problem statements, algorithms, and flow charts for each of the following programs: (Can you identify which language this is?) Then determine the output of each program.

Program #1:

```
VAR TEMPERATURE : INTEGER;
BEGIN (* SPORT *)
    READ (*TEMPERATURE) ;
    WRITELN(TEMPERATURE) ;
    IF TEMPERATURE > 85
        THEN WRITELN( ' WATER SKIING ' )
    ELSE IF TEMPERATURE > 70
        THEN WRITELN( 'TENNIS ')
    ELSE IF TEMPERATURE > 32
        THEN WRITELN( ' JOGGING ' )
    ELSE IF TEMPERATURE > 10
        THEN WRITELN( ' SNOW SKIING ' )
        ELSE WRITELN( ' PICTIONARY ' )
END.    (* SPORT *)
```

Problem #2

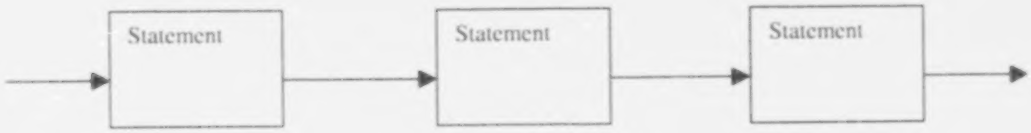
```
VAR AVE  :  REAL ;
    TEST1 , TEST2 , TEST3 : INTEGER ;
    DATAOK :  BOOLEAN ;
BEGIN (* NOTICES *)
    READLN( TEST1, TEST2, TEST3) ;
    WRITELN( TEST1, TEST2, TEST3) ;
    IF (TEST1 < 0 ) OR (TEST2 < 0) OR (TEST3 < 0)
        THEN DATAOK := FALSE
        ELSE DATAOK := TRUE ;
    IF DATAOK
        THEN
            BEGIN
                AVE := (TEST1 + TEST2 + TEST3)/3 ;
                WRITELN( ' AVERAGE IS ' , AVE) ;
            IF AVE >= 70.0
                THEN
                    BEGIN
                        WRITELN( ' STUDENT IS PASSING ' ) ;
                    END
                ELSE WRITELN( ' STUDENT IS FAILING ' )
            END
        ELSE WRITELN( ' INVALID DATA ' )
END. (* NOTICES *)
```

Problem #3

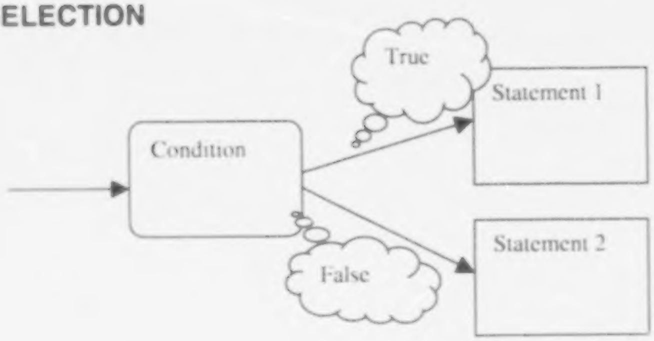
```
10 FOR N = 1 TO 6
20 READ A,B
30 LET C = A + B
40 PRINT A,B,C
50 NEXT N
60 DATA 4,8,10,3,21,-5,22,34,51,-51,2,100
70  END
```

IT NOTES
Lesson 19-5

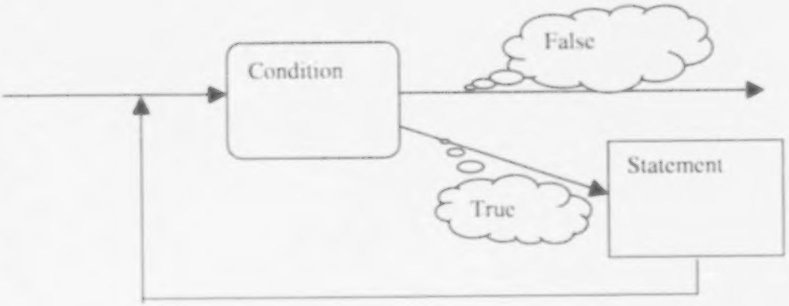
SEQUENCE


Statement
Statement
Statement

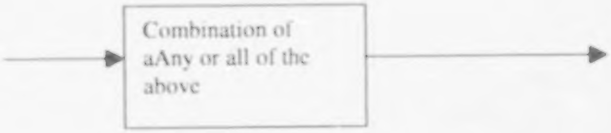
SELECTION


True
Statement 1
Condition
Statement 2
False

LOOP


False
Condition
Statement
True

PROCEDURE


Combination of
aAny or all of the
above

Designing and Developing New Programs

LESSON 19-6: The Five Steps of Program Development: Coding *Approx. time: 2 classes*

Lesson overview:

Students discuss programming language definitions. They apply what they have learned about writing problem statements and algorithms, and drawing flow charts to a specific programming language code. More in-depth activities include comparing programming languages.

Students will demonstrate the ability to:

1. Present differences between specific programming languages. (T/PRG)
2. Interpret programs written in different languages and develop problem statements and algorithms from code. (T/PRG)
3. Communicate effectively in group discussions. (F/TW, ES-4, ES-10)
4. Analyze/interpret and summarize/synthesize technical information. (F/ANL)
5. Explain the different steps of computer program development. (T/PRG)

Content Required:

1) Programming language information off the Internet at http://upside.net/~chrisb/c++/.
2) Application of the first three steps in computer program design to a specific language.

Materials checklist:

- ✓ Transparency and handout of IT Notes - C++ (*JMOD19-6-1*) for each student, if downloaded file content is not used
- ✓ Transparency and handout of IT Notes - BASIC and Pascal (*JMOD19-6-2*) for each student
- ✓ Transparency and handout of IT Notes - Computer Program Development (*JMOD19-6-3*) for each student
- ✓ Transparency and handout of IT Notes - HTML (*JMOD19-6-4*) for each student
- ✓ Handout of Student Activity 6A (*JMOD19-6-5*) for each student
- ✓ Handout of Student Activity 6B (*JMOD19-6-6*) for each student

Equipment checklist:

- ✓ Overhead projector
- ✓ Computers installed with programming software program
- ✓ Computer display projector
- ✓ Student disks

Teaching strategy:

Part 1 – Hands-on Computer Activity

1. Have students download to their disks the information off the Internet from: http://upside.net/~chrisb/c++/. Instruct them to open the file in Word and read the content. If this is too time-consuming, distribute the IT Notes - C++ (*JMOD19-6-1*) and provide time for the students to review the content.

Part 2 – Classroom Discussion

2. Introduce the students to the concept and structure of C++.
3. Using the IT Notes or the downloaded file information, instruct the students to study these basic concepts and discuss in groups each of the sections of the C++ structured programming information.
4. Conclude the discussion by working closely with the students to develop a C++ coding example using the real life example for the center.

HOT Activities:

1. Using the IT Notes - BASIC and Pascal handout (*JMOD19-6-2*), ask students to compare/ contrast two different programming languages and prepare a written analysis. During a subsequent class discussion, ask students to share their comments from the analyses.
2. Have students read the information in the IT Notes-HTML (*JMOD19-6-4*) that begins to introduce the HTML program language. Provide time for the students to complete the Student Activity Sheet 6B (*JMOD19-6-6*).
3. Distribute the IT Notes-Computer Program Development (*JMOD19-6-3*) and the Student Activity Sheet 6A (*JMOD19-6-5*) and explain thoroughly the process of computer program development. Have students complete the activity individually.

Assessment methods:

- Assessment by instructor of student ability to compare and differentiate between programming languages.
- Observation by instructor of group interaction and contribution to discussion of center's program.
- Instructor assessment of student activity sheets.
- Evaluation by student and instructor of ability to understand technical information.

Instructor evaluation and comments for improvement:

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IT NOTES – C++
Lesson 19-6

C++ Program Structure, from an Online Tutorial at: http://upside.net/~chrisb/c++/

The Basics

- **Variables**

  Data, storage, range, and memory

  Built-in variables consumes a power-of-two-sized portion of memory. 2^8 (8 bits) 2^16 (16 bits) 2^32 (32 bits), the range of numbers that each variable can use.

  integers : int (2^16 or 2^32 possible values)
  reals : float (2^40 possible values)
  character data : char (2^8 possible values)

- **Declarations**

  Informs compiler of a new variable.

  Must declare variables before you use them
    allocate space in memory
    informs the compiler what type of data the variable holds
    to bind an identifier to the data

  Example:

  ```
  int  age ;
  char  firstInitial ;
  float  distanceToSun;
  ```

- **Assignments and Initializations**

  An easy way to both declare and assign a variable in a single step.

- **Constants**

  Should be used for representing a value that isn't likely to change.

- **Functions**

  They do something every time they are referenced, they call for something, and input, and return something, and output. A function prototype tells the compiler what it needs to know about the function's return type and parameter types.

The function body defines what the function actually does:

Example:

```
int  add TwoNumbers( int number1, int number2);
{
    return (number1 + number2);
}
```

- **Invoking Code**
  Means to have it execute. The following will execute the code:

```
int result = addTwoNumbers(3,5);
```

- **You can use variable or constants**

```
int a = 3;
int b = 5;
int result = addTwoNumbers(3,5);
```

Input / Output

Input is what the user gives the program. The Output refers to what the computer program sends to the user.

- **Definitions**
  The user sits at the console. The keyboard is a way to get input into the program, and the screen is a program's output device.

  - Access to the console begins with the letter c, "cin" is the input device, and "cout" is the output device. Their functions are part of a library called the I/O streams.

  - To send the number 10 to the display (the arrows show which way the data is flowing):

    ```
    cout << 10;
    ```

  - You need to declare a variable to receive input (after this code executes, "answer" will hold whatever value the user entered:

    ```
    int answer;
    cin >> answer;
    ```

- **Example program**
  - A simple algorithm for this example program:
    1. Ask the user for 3 numbers
    2. Calculate the average
    3. Display the average
  - Read to understand what each step does:

```
// avguser.cpp: code to ask the user for three numbers
//average them, and then display the result.
//
Christian R. Bill, Jun-09-1998.
//

//Draw in the prototypes for the IO streams #include <iostream.h>

// --- function prototypes ---
int AskForNumbers( );

//  AskForNumbers ( ): asks the user for three numbers
//
int AskForNumbers ( )
{
    //Declare the variables to hold the numbers entered int
    n1,n2,n3;

    //Ask the user to enter the numbers

    cout << "Please enter three numbers: ";
    cin  >> n1 >> n2 >> n3;

    // Give the total back to whoever asked
    return ( n1 +n2 +n3) ;
}

//main( ) : entry point for all C++ programs
//
int  main( )

{
    //Display an average
    int total = AskForNumbers ( ) ;
    cout << "Average:  "  << (total / 3);

    return 1;
}
```

- The output:

```
Please enter three numbers:  50 100 75
Average:  75
```

Flow Control

- **Scope**--place where a variable exists. There are local and global scopes. **Global scope** is visible to every part of a program. A **local scope** exists only in the code or function where it was declared.
- How does the following local variable work?

```
#include <iostream.h>
int j = 0;
int main ( )
{
        int j = 10;
                {
                        int j = 30;
                        {
                                int j = 50;
                                cout << j<< ","' '
                        }
                        cout\ << j << " , " '
                }
                cout << j ;
                return 1;
}
```

- The output:

```
50, 30, 10
```

- Notice that the indenting allows to follow the flow of the program

Boolean Expression: Is something that evaluates to a Boolean value, and their value is either true or false

- **Control Statements** - The most useful place for Boolean expressions
  - **Example with if..then:**

```
#include <iostream.h>

int main ( )
{
     int nAge:                          //Variable for age

     cout<< "How old are you? " ;
     cin >> nAge;

     if ( nAge < 10)  {
                    cout << "It's never too early to start
     programming!" ;
     }

     return 1:
}
```

  - **Example with else:**

```
     #include <iostream.h>

int main ( )
{
          int nAge:              //Variable to hold the user's age
     const   int  ENTRY_AGE = 21 ;      //Minimum age to enter

     // Prompt the user for their age
     cout << "How old are you? " ;
     cin >>nAge ;

     // Now, make sure the user is old enough to enter!
     if ( nAge >=ENTRY_AGE )  {
                    cout << "Welcome!" ;
     }

     else  {
          // Tell the user how many more years they need
          cout <<  "Sorry, but you still have "
                <<  (ENTRY_AGE - nAge )
                <<  " years until you can enter" ;
     }

     return 1;

}
```

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Arrays: Contiguous block of the same data type, for example, where n is constant expression, and the array is a set of integers (static data, because size is fixed)

int myIntegerArray [n];

- **Arrays definitions**
  - Array Bounds--the beginning of the array, the first element, is the lower bound, and the top en is the upper bound. C arrays have a lower bound of 0.
  - Element--an individual entity inside the array, example, array[0] is the first element.
  - Array Subscript--the expression inside [...]

    int anIntegerArray[10]; actually allocates 11 (not 10) integers because the starting element is 0.

- **Example** (Compiler ignores white spaces unless they are between keywords, identifiers, symbols, literal constants, etc.)

```
int
/* I like C ...*/
// and C++
j =
/* Let's set j to 10 */
10
// I'm done with this statement
;

// arravg.cpp : number averager that uses arrays
//
//Christian R. Bill, Jul-23-1998
//
#include <iostream.h>

int main ( )
{
    const  int  NUMBERS = 3;

    int  numbers [NUMBERS] ;

    cout << "Please enter " << NUMBERS << " numbers: "'

    // Read NUMBERS numbers from the keyboard
    cin  >>  numbers[0]
         >>  numbers [1]
         >>  numbers [2] ;
```

```
        //Calculate the average
        int  nAverage = (numbers [0] + numbers [1] + numbers [2] ) /
                         NUMBERS ;

        // Display the result
        cout <<  "The average is "  << nAverage ;

        return1;
    }
```

- The output of the program:

```
Please enter 3 numbers : 100  50  75
The average is 75
```

Dynamic Data & Pointers

- **Dynamic vs. Static Data**
  - Static data is allocated by the computer
  - Dynamic data is allocated by the programmer, which allows for more flexible and complex structures like linked lists, binary trees, and has tables.
  - If you were to write a program to keep track of an unlimited number of CDs, you would define some properties of that CD: The track names, the artist, and the title. Because the number of tracks on a CD is not uniform to all CDs, the track information should be a dynamic array. Also since you want to keep track of an unlimited number of CDs, there is not way to statically allocate x number of tracks (that's not static).

- The "**Address**" of a variable is its location in memory.

- **References** is an alias to another variable, and is not a copy of a variable.

- **Simple Pointers**--point to another location in memory. They:
  - Do not immediately need to be initialized, and they can be "moved to a different location.
  - Can also shadow a variable, as in this example the "*" denotes a pointer. It is not the data stored at that location:
  - int *pInteger.
  - Need lots more information on this because it is tricky!

- **Dynamic Allocation**--needs further explanations, too!

IT NOTES – BASIC and Pascal
Lesson 19-6

Programming Code

A computer programming language to express an algorithm. An algorithm is carrying out a set of steps to accomplish a task. It is the set of steps that starts with known information in a problem statement and manipulates it to arrive at the solution.

Comparative analysis of two programming languages, BASIC and Pascal.

a. **Expressions**

- The question should always be asked "WHAT IS THIS SAYING?"
- Operators

BASIC	Pascal

carrot symbol ^ means exponent where there is no exponential operator

BASIC	Pascal
x^y means " x to the power of y"	exp(y*in(x))

- Boolean types.
  - A Boolean operator returns TRUE if the integer supplied is non-zero; otherwise it returns FALSE.
  - INT, or int is the greatest integer function, which returns the greatest integer up to the given number without the decimal.
  - In the following code 'int' means the integer function is returned from a Boolean operator '1' for TRUE and '0' for FALSE.

BASIC	Pascal
I = 1 AND 2 + 3	i := int(bool(1) AND bool (2 + 3));

- Operators:

Assignment	=	: =
Negation	-a	-(a)
Exponentiation	a ^ b	power(a,b)
Multiplication	a * b	a * b

Division	a / b	a / b
Integer Division	a / b	a div b
Addition	a + b	a + b
String Addition	a + b	concat(a,b)
Subtraction	a - b	a - b
Equality	=	=
Inequality	<> or ><	<>
Less than	<	<
Greater than	>	>
Less than or equal to	<= or =<	<=
Greater than or equal to	>= or =>	>=
NOT	NOT a	not (a)
AND	a AND b	a and b
OR	a OR b	a or b

b. **INPUT Statement**

```
INPUT "name ?" ; NAME $
```

```
write('name?');
readln(name);
```

c. **Functions**

- **User-Defined Functions (DEF FN's)**

```
DEF FN A(X) = (x * X * X) + 4
```

```
function a(x : real) : real;
begin
        a := (x * x * x) + 4
end;
```

- **Built-In**

ABS(a)	abs(a)
SIN(a)	sin(a)
COS(a)	cos(a)
TAN(a)	tan(a)
INT	trunc
RND	rnd (library function)
SGN	sgn (library function)
SQR	sqrt
EXP	exp
LOG	ln
ATN	atan
LEN (sexprc)	length (sexprc)
STR$ (axpres)	str (axpres)

751

VAL (sexprc)	val (library function)
CHR$ (axpres)	chr
ASC (sexprc)	asc (library function)
LEFT$ (sexprc,axpres)	copy (sexprc,1, axpres)
RIGHT$ (sexprc,axpres)	(sexprc,length(sexprc) + 1 - axpres, axpres)
MID$ (sexprc,axpres)	(sexprc,axpres, length(sexprc) + 1 - axpres)
MID$ (sexprc, axpres1, axpres2)	(sexprc, axpres1, axpres2)

sexprc is a string expression
axpres is an arimetic expression

d. **IF/THEN Statements:**

```
BASIC:                                      Pascal

10 IF S = 1 THEN X = 3                      if  s = 1
                                             then  x := 3:


IF A = 1  THEN INPUT N$                     if a = 1 then
                                                 begin
                                                 write( '?' );
                                                 readln(n);
                                            end;
```

e. Both use **GOTO** Statements. BASIC uses line numbers from 21 t0 63999 (many use counting by 10's), and Pascal's line numbers go from 1 to 9999.

f. **FOR / NEXT Statements**

```
10  FOR I = 1 TO 5                          i := 1;
20 Print I                                       repeat
30  Next I                                       writeln(i)
                                             i := I + 1:
                                                 until i > 5;


IF (A = 1) THEN                             no equivalent
      FOR I = 1 TO 12
```

g. **Comments**

REM $R-	{$R- }
REM CATS } AND DOGS	{Cats } and Dogs}

h. **Variable Names**

A, A%, A$	a, a_integer, a_string

- GLOBAL variables
- Local variables

i. **Reserved Words and Predefined Identifiers common to both (there are others that are not common to both)**

ARRAY, ABS, BEGIN, BLOCKREAD, BLOCKWRITE, BOOLEAN, CASE, CONST, CHAR, CHR, CLOSE, CONCAT, COPY DIV, DO, DOWNTO, DELETE, ELSE, EXTERNAL, EOF, EOLN, EXIT, FILE, FORWARD, FUNCTION, FALSE, FILLCHAR, IN IMPLEMENTATION, INPUT, INSERT, INTEGER, INTERFACE, INTERACTIVE, IORESULT, KEYBOARD, LABEL, LENGTH, MARK, MAXINT, MEMAVAIL, MOD, MOVELEFT, MOVERIGHT, NEW, ODD, OF, ORD, OUTPUT, PACKED, PAGE, POS, PRED, PROCEDURE, PROGRAM, PUT, PWROFTEN, READ, READLN, RECORD, RELEASE, REPEAT, RESET, REWRITE, SET, SEGMENT, SCAN, SEEK, SIZEOF, SQR, STR, STRING, SUCC, THEN TO TYPE, TREESEARCH, TRUE, TRUNC, UNTIL, UNIT, USES, UNITBUSY, UNITCLEAR, UNITREAD, UNITWAIT, UNITWRITE, VAR, WHILE, WITH WRITE, WRITELN.

j. Data Types

- Both use integer, real, and string variables, with a default length (about 80 characters)
- Array elements are reference differently. A two-dimensional array:

A(1,2)	A[1,2]

k. **Constants and Literals**

- Numeric constants require different syntaxes.

.05	0.05

- String literals:

double quotation marks	single quotation marks
" "	' '

l. **DIM Statements**

DIM A(20) sets up a 21-element array (0-20)	Dim A(20) sets up a 21-element array (0-20)
DIM A(J + 1) dimensions specified by Arithmetic expressions.	No dynamic array support

m. There are BASIC Statements with no Pascal equivalent

n. **Program Structure**

- **BASIC Program Structure**
  - BASIC stands for Beginner's All-purpose Symbolic Instruction Code
  - BASIC has about twenty statement types. Within the simple line-by-line series of instructions or statements inputed, subroutines can branch the structure to other parts of the program and then return again. GOSUB, directs control to a particular subroutine, and RETURN sends the control back to the statement following the GOSUB that branched to the subroutine. The program then continues to execute the next steps until it arrives at the end to achieve an output or result.
  - What does the following program do?

```
10 INPUT X
20 ON X GOSUB 150 , 200 , 310, 310, 150 , 999
```

```
 30 IF X = 0 OR X .> 6 THEN  PRINT "VALUE OUT OF RANGE,
    PLEASE RETYPE : "
 40 GOTO 10
150 PRINT "VALUE IS 1 OR 5"
160 RETURN
200 PRINT "VALUE IS 2"
210 RETURN
310 PRINT "VALUE IS 3 OR 4"
320 RETURN
999 END
```

- **Pascal Program Structure**
  - program name statement
  - uses declaration
  - declarations
    - constants
    - variables
    - type definitions
    - variable declarations

```
var
  a, b, c : integer:
   alfred, betty : in  : string;
```

  - procedure name and definition
    - variables
    - begin
    - body
    - end
  - Library Procedures and Functions--brought in from other files

```
function tan(x : real)  :  real
begin
   tan := sin(x) / cos(x);
end;
```

  - The "Initialize" Procedure--initializes each variable.

```
procedure initialize;

begin
```

```
        a_integer := 0;
        a_real := 0;
        a_string := '   ';
        fillchar(a_array, sizeof(a_array), chr(0));
    end;
```

- User-Defined Functions (DEF FN's)

```
    function a(x  :  real)  :  real;
    begin
        a := ( x * x * x) + 4;
    end;
```

- The Main Program Block

- What does the following Pascal Program Do?

```
var
    a,b: integer;

procedure reduce (var a,b:integer; by:integer);
begin
    if by<=a then
    if ((a mod by ) =0) and ((b mod by) =0) then
        begin
                a:=a div by;
                b:=b div by;
                reduce (a,b,by);
        end
    else reduce (a,b,by+l);

end;

begin
    readln(a,b);
    reduce(a,b,2);
    writeln(a:5,b:5);
end.
```

IT NOTES
Computer Program Development
Lesson 19-6

1. Problem definition, requirements and specifications:

   - Reviewing the program specifications.

   - Understanding the purpose of the program.

   - Specifying data flow diagrams, system flowcharts, process specifications indicating the actions taken on the data, screen formats, report layouts, etc.

2. Designing: The programmer determines the specific actions the computer will take to accomplish the desired tasks:

   - Designing the logical step-by step procedure, or algorithm.

   - Employing structured program design elements:
     - Parts of program called modules or subroutines
     - Control Structures to create program logic solutions:

       sequence structure

       one process occurs immediately after another.

       selection structure

       If-then-else structure tests a given condition: if the condition is false, the false portion is executed, and similarly for the true condition.

       iteration or looping structure
       - A process continues to occur as long as a given condition exists.
       - Do-while, does a process and tests at the beginning of the loop and as long as the test is true it continues; when test is false, then process exits the loop.
       - Do-until, is similar but the test is at the end of the loop, so the process continues until a condition is met.

- Single entry/single exit -
  - only one entry point and one exit point for each control structure.
  - no spaghetti code please
- program flow charts -
  - logical steps of a program are represented by a combination of symbols and text.
  - national standards
- pseudocode -
  - using English statements and indentations to represent the control structures.
- structured walkthrough -
  - review of the program logic by other members of the development team, to find errors.

3. Coding: The program language is used to write instructions.

- Write the program instructions in an appropriate language

4. Testing and Debugging: The program is tested to make sure it performs the expected task.

- Desk-checking by reading the program to check for syntax errors

- Logic testing the sequencing of steps is to see if it gives the desired result.

- Debugger programs will find syntax errors.

5. Finalize Documentation

- Documentation should be on-going during the programming process

- Includes narrative description of the program, comments on the program

- Data entry and computer operations procedures documented prior to implementation

- Helps if corrections or changes have to be made later.

6. Examples of programming languages:

- Fortran: An example of the IF...THEN control statement
    - Problem Statement: Suppose a baseball player hits a ball, and the bat propels the ball from a height of 3 feet at a speed of 150 ft/s, and at an angle of 53.1 degrees with respect to the horizontal. When will the ball hit the ground?
    - Problem Statement:
        - As you know, the solution will be the roots of a quadratic equation, h(t0 = -16 t^2 + (v_0 sin A) t + h_0 . To make the problem a little simpler we can find the value of (v_0 sin A) which is our B in the quadratic formula: Ax^2 + Bx + C, with A = -16, C = h_0 , and h_0 = 3.
        - Find the roots or solutions to the quadratic formula, Ax^2 + Bx + C, given the coefficients A, B, C.
    - An algorithm for the problem:
        1. Read values for A, B, C for the quadratic equation.
        2. Compute argument (B squared minus 4 times A times C).
        3. If the argument is negative, define roots equal to zero.
        4. Otherwise compute B minus square root of argument, divided by 2 A and B plus square root of argument, divided by 2A.
        5. End of instructions.
    - Fortran Code:

```
C2345678910
      READ (5,*) A,B,C
      ARG = B**2 - 4*A*C
      IF  (ARG.GE.0) THEN
            X1= (-B + ARG** .5) / (2.0*A)
            X2 = (-B - ARG** .5) / (2.0*A)
      ELSE
            X1 = 0.0
            X2 = 0.0
      ENDIF
      WRITE (6,*) 'ROOTS ARE', X1, X2
      STOP
END
```

IT NOTES – HTML
Lesson 19-6

- There are many good Online sources for HTML code.

1. http://werbach.com/barebones/>

2. At the Online site, http://www.netusa1.net/~jbornema/html.rtf, you will find:
    - First Steps
        - HTML Editors
        - The HTML Markup Language
            - General Tags
            - Lists
            - Highlighting
            - Pre-Defined Text
            - Special Characters
        - HTML 3.0 and Netscape Extensions
            - Backgrounds
            - Colored Typing
            - Tables
        - Links
            - Anchors
            - Links to Other Sites
                - HTTP Links
                - FTP Links
                - Gopher Links
                - Newsgroup Links
                - Individual File Links
    - Putting Your Site on the Web
        - Style Rules
        - Putting the Page on the System
        - Advertising Your Site
    - Extras To Help You
        - Style Guide at CERN
        - Don'ts for HTML
        - HTML Validator

- In Word, you can type in the code, save the file to disk with the .html extension, and open the file in a Browser to see what it looks like.

- Begin a page in an HTML application program such as Claris HomePage, Front Page, etc., and then edit the HTML code to do much more fancy stuff.

Student Activity Sheet 6A
Lesson 19-6

STUDENT NAME: ______________________________

INSTRUCTIONS: Complete each of the exercises below on separate sheets of paper and attach them to this copy.

1. Perform a structured walkthrough of the algorithm and a desk check of the sample code at the end of your IT Notes - Computer Program Development.
2. Then create a flow chart for this program.
3. Write the same program in BASIC, on your calculator, or in the programming language you will be using for this class.
4. Create a flow chart for each of the programs we have investigated so far.

Student Activity Sheet 6B
Lesson 19-6

STUDENT NAME: ______________________

INSTRUCTIONS: Write a problem statement, algorithm and flow chart for each of the following HTML codes:

- **Problem #1:**

```
<HTML>
<HEAD>
<TITLE>Designing and Developing a New Music Tracking
Program</TITLE>

</HEAD>

<BODY BACKGROUND=""backgrnd.gif""

<IMG SRC="animated.gif">

</BODY>
</HTML>
```

- **Problem #2:**

```
<HTML>

<BODY>

<TABLE Border=1>

<Caption>table caption</Caption>

<TR> <TD>1st Cell 1st Row</TD> <TD>2nd Cell 1st Row</TD>

<TR> <TD>1st Cell 2nd Row</TD> <TD>2nd Cell 2nd Row</TD>

<TR> <TD>1st Cell 3rd Row</TD> <TD>2nd Cell 3rd Row</TD>

</TABLE >

</BODY>

</HTML>
```

- **Problem #3:**

```
<HTML>
<HEAD>
<TITLE>Designing and Deveioping a New Music Tracking
   Program</TITLE>
</HEAD>
<FRAMESET COLS = "20%, 80%">
<FRAME SRC="menu.htm:  NAME=‘menu_frame">
<FRAME SRC="main.htm" NAME="main_page">
<FRAME SCR="menu.htm" NAME="menu_frame"
   SCROLLING=yes>
<A HREF="mypage.html"  TARGET="main_page"></A>
<A HREF="mymenu.ntml"  TARGET="menu_frame"></A>

</FRAMESET>
<NOFRAMES>This page uses Frames</NOFRAMES>
</HTML>
```

- **Problem #4:**

```
<HTML>

<BODY>

<A HREF="http://www.yahoo.com/"  > click here to visit Yahoo

<OL>

<LI>This is the 1st list Item

<LI>This is the 2nd list Item

<LI>This is the 3rd list Item

<LI>This is the 4th list Item

</OL>

<A HREF="mailto:SomeOne@SomePlace.com"  > click here to
send mail to a SomeOne@SomePlace

<P>this is the 1st paragraph on this html example and it should
work fine
</P>

<P>this is the 2nd paragraph on this html example and also works
fine </P>
```

- **Problem #5**
  This is the HTML code for a main Web Page.

```
<!--This file created 8/14/98 12:22 PM by Claris Home Page version 2.0-->
<HTML>
<HEAD>
  <TITLE>rhsmain</TITLE>
  <META NAME=GENERATOR CONTENT="Claris Home Page 2.0">
  <X-SAS-WINDOW TOP=51 BOTTOM=465 LEFT=62 RIGHT=592>
</HEAD>
<FRAMESET cols="35%,71%">
<NOFRAMES><BODY>

<P>This page is designed to be viewed by a browser which supports
Netscape's Frames extension. This text will be shown by browsers
which do not support the Frames extension.</P>

</BODY>
</NOFRAMES>
  <FRAME SRC="/UltraDrive%2080Si/rhs%20page/sidebar.html"
  name="sidebar">
  <FRAME SRC="/UltraDrive%2080Si/rhs%20page/rhsrightside.html"
  name="right">
</FRAMESET>
</HTML>
```

This is the code for the frame on the left, or the sidebar:

```
<!--This file created 8/14/98 12:23 PM by Claris Home Page version 2.0-->
<HTML>
<HEAD>
  <TITLE>sidebar</TITLE>
  <META NAME=GENERATOR CONTENT="Claris Home Page 2.0">
  <X-SAS-WINDOW TOP=43 BOTTOM=393 LEFT=4 RIGHT=534>
</HEAD>
<BODY BGCOLOR="#FFFFFF" LINK="#138607" ALINK="#138607"
VLINK="#138607">

<P><CENTER><FONT SIZE="+1" COLOR="#138607"><IMG
SRC="/UltraDrive%2080Si/rhs%20page/rhslogo.gif" WIDTH=137 HEIGHT=180
ALIGN=bottom></FONT></CENTER></P>

<P><CENTER><FONT SIZE="+1" COLOR="#138607">Activities</FONT>
</CENTER></P>

<P><CENTER><FONT SIZE="+1" COLOR="#138607"><A HREF="RHSAlumni"
TARGET="right">Alumni</A></FONT></CENTER></P>

<P><CENTER><FONT SIZE="+1" COLOR="#138607">Athletics</FONT>
</CENTER></P>

<P><CENTER><FONT SIZE="+1" COLOR="#138607">Calender</FONT>
</CENTER></P>

<P><CENTER><FONT SIZE="+1"
```

```
COLOR="#138607"><A HREF="http://sea-
css.ssd.k12.wa.us/roosevelt/DEPT.HTML">Departments</A></FONT>
</CENTER></P>

<P><CENTER><FONT SIZE="+1"
COLOR="#138607"><A HREF="http://sea-css.ssd.k12.wa.us/roosevelt/roosnews.html"
TARGET="right">Newspaper</A></FONT></CENTER></P>

<P><CENTER><FONT SIZE="+1"
COLOR="#138607"><A HREF="http://www.bcc.ctc.edu/psesd/roosevelt/studorg.html"
TARGET="right">Organizations</A></FONT></CENTER></P>

<P><CENTER><FONT SIZE="+1"
COLOR="#138607"><A HREF="http://sea-css.ssd.k12.wa.us/schools/roosevelt/roosevelt.html"
TARGET="right">Our School</A></FONT></CENTER></P>

<P><CENTER><FONT SIZE="+1" COLOR="#138607">Pictures</FONT>
</CENTER></P>

<P><CENTER><FONT SIZE="+1"
COLOR="#138607"><A
HREF="http://www.komotv.com/schoolscout/roosevel.htm">Profile</A></FONT>
</CENTER></P>

<P><CENTER><FONT SIZE="+1"
COLOR="#138607"><A HREF="http://www.bcc.ctc.edu/psesd/roosevelt/STAFF.HTML"
TARGET="right">Staff</A></FONT></CENTER></P>

<P><CENTER><FONT SIZE="+1"
COLOR="#138607"><A HREF="/UltraDrive%2080Si/rhs%20page/rhsrightside.html"
TARGET="right">Home</A></FONT></CENTER></P>
</BODY>
</HTML>
```

This is the code for the frame on the right:

```
<!--This file created 8/14/98 12:24 PM by Claris Home Page version 2.0-->
<HTML>
<HEAD>
  <TITLE>rhsrightside</TITLE>
  <META NAME=GENERATOR CONTENT="Claris Home Page 2.0">
  <X-SAS-WINDOW TOP=53 BOTTOM=449 LEFT=47 RIGHT=499>
</HEAD>
<BODY BGCOLOR="#FFFFFF">

<P><CENTER><IMG SRC="/UltraDrive%2080Si/rhs%20page/rhstitle.gif"
WIDTH=316 HEIGHT=36 X-SAS-UseImageWidth X-SAS-UseImageHeight
ALIGN=bottom></CENTER></P>

<P><CENTER><IMG SRC="/UltraDrive%2080Si/rhs%20page/rhsemblem"
WIDTH=187 HEIGHT=177 ALIGN=bottom></CENTER></P>

<P><TABLE BORDER=0 WIDTH="100%" HEIGHT=76>
  <TR>
    <TD WIDTH=149 HEIGHT=20>
```

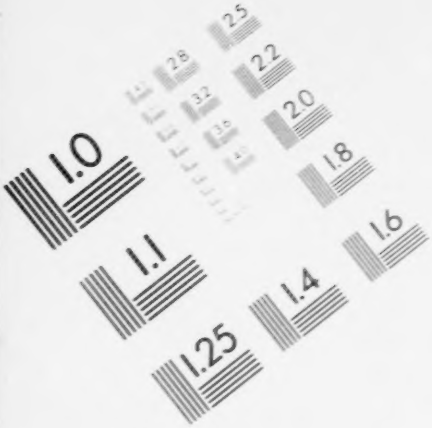
```
      <P><B><FONT SIZE="+1" COLOR="#D6D600">Roosevelt High
      School</FONT></B>
    </TD><TD HEIGHT=20>
      <P ALIGN=RIGHT><B><FONT SIZE="+1" COLOR="#D6D600">Office:
      (206) 729-3200</FONT></B>
    </TD></TR>
  <TR>
    <TD WIDTH=149>
      <P><B><FONT SIZE="+1" COLOR="#D6D600">1410 NE 66th
      St.</FONT></B>
    </TD><TD>
      <P ALIGN=RIGHT><B><FONT SIZE="+1"
      COLOR="#D6D600">Attendance: (206) 729-3208</FONT></B>
    </TD></TR>
  <TR>
    <TD WIDTH=149>
      <P><B><FONT SIZE="+1" COLOR="#D6D600">Seattle, WA
      98115</FONT></B>
    </TD><TD>
      <P ALIGN=RIGHT><B><FONT SIZE="+1" COLOR="#D6D600">Fax: (206)
      729-3201</FONT></B>
    </TD></TR>
</TABLE></P>
</BODY>
</HTML>
```

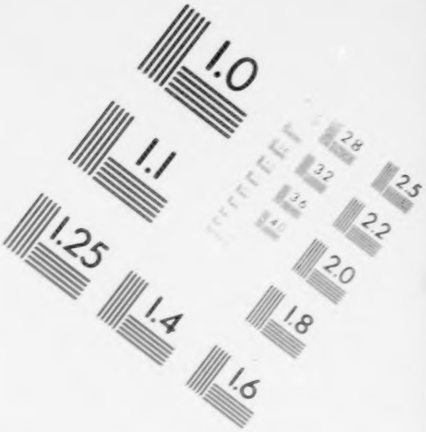
AIIM

Association for Information and Image Management

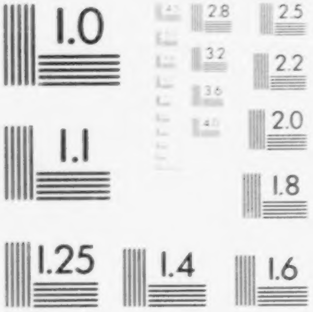
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910

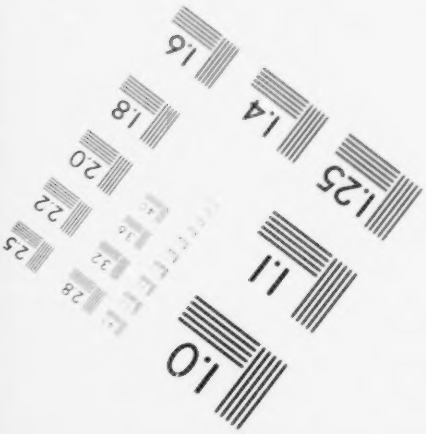
301/587-8202

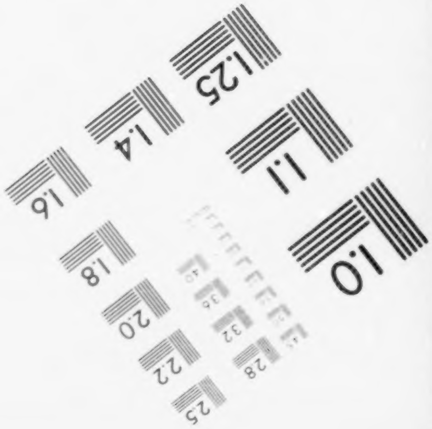

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0

Centimeter
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 mm
1 2 3 4 5
Inches


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0

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LESSON 19-7: The Five Steps of Program Development: Testing and Debugging

Approx. time: 1 class

Lesson overview:

Students are formally introduced to a structured "walk through" on algorithms, flow charts, and programs. Debugging strategies are investigated by various activities so that students learn how to test a computer program, detect errors and correct them.

Students will demonstrate the ability to:

1. Participate in a development team using the structured "walk through" and ego-less programming techniques. (T/PRG)
2. Explain and apply debugging processes, including debugging utilities. (T/PRG)
3. Develop a complete testing process, including test data for a computer program. (T/PRG)
4. Detect errors and correct them. (T/PRG)
5. Organize and work in a team setting. (F/TW, ES-10)
6. Recognize expertise and learn from others. (F/TW, ES-10)

Content Required:

1) State the input and output of each step in an algorithm.
2) Make corrections and additions to programs, as needed.
3) Work out all bugs in steps.
4) Determine if a program solution is correct.

Materials checklist:

- ✓ Handout of Student Activity Sheet 7A (*JMOD19-7-1*) for each student
- ✓ Handout of Student Activity Sheet 7B (*JMOD19-7-2*) for each student
- ✓ Handout of Student Activity Sheet 7C (*JMOD19-7-3*) for each student

Equipment checklist:

- ✓ Computers installed with programming software program.
- ✓ Computer and computer display overhead projector.
- ✓ Student disks.
- ✓ Programming software with a program debug utility, if available.

Teaching strategy:

Part 1 – Group Discussion and Activity

1. Discuss with the group ways that students already use "debug" processes in their everyday life, such as:

- Checking spelling and grammar when writing, or using Spell Check on a computer software program.
- Checking their backpacks in the morning before leaving for class to make sure they have everything they are supposed to take: assignments, books, pencils, pens, paper, snack, Walkman, etc.
- Checking their math or science papers for correct answers.

2. Explain the "walk through" process to students before they begin.
   - If the algorithm doesn't produce a satisfactory answer, the student/programmer repeats the problem-solving process, analyzing the problem again and correcting or re-writing the algorithm.
   - The re-written algorithm is again tested manually to determine if it produces a satisfactory solution.

Part 2 – Student Activities

3. Use the handout, Student Activity Sheet 7A (*JMOD19-7-1*), for further discussion and additional practice. Have students analyze the input and output of steps in an algorithm.
4. Distribute the Student Activity Sheet 7B (*JMOD19-7-2*) and instruct students to read through algorithms and perform "walk throughs" by developing each step mentally or manually to test if the algorithm produces a satisfactory answer. Each algorithm in this activity could be assigned to a different group and each group could then discuss its work and solutions with the whole class.

Part 3 – Classroom Discussion

5. Discuss the results from both of the Student Activity Sheets either as individual groups, or as a whole class.
6. Continue with Student Activity Sheet 7C (*JMOD19-7-3*) for a class activity.

HOT Activities

1. Have students develop a written testing procedure for the real life scenario at the center and apply it to the program.
2. If you have a computer language software program that includes a debug utility, you could introduce a lesson using the software and then show how the debug utility works.
3. *Mathematica* is an example of a mathematics computer software program that executes code and utilizes a debug utility by displaying syntax error messages in red on the screen underneath the code. It would be a great example to use to explain what a debugger does and how it helps in programming.
4. Another source of an example for debugging coded programming is the programmable calculator. It gives error messages when syntax and other logical errors are detected.

Assessment methods:

- Evaluation by instructor that testing procedures are organized and thorough.
- Assessment by instructor of exercises completed in Student Activity Sheets.
- Assessment by students and instructor of each student's ability to debug someone else's code.
- Observation of group interaction
- Evaluation of student ability to develop and apply a systematic testing of code.

Instructor evaluation and comments for improvement:

Student Activity Sheet 7A
Lesson 19-7

Part 1:

1. Pick five **problem statements** written in previous lessons, and instruct students to state the question and write the answer to the question: "If this problem is expanded correctly, what is it supposed to do?"
2. Set up the problem statements in this format:

Problem Statement:	INPUT:	OUTPUT:

Part 2:

3. Pick five **algorithms** written in previous lessons and write the answers to the question: "If this step is expanded correctly, will it do what needs to be done or will it do what it is supposed to do?"
4. Number each step in each algorithm, and write the following:

Algorithm Step:	INPUT:	OUTPUT:

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Student Activity Sheet 7B
Lesson 19-7

For each of the following Algorithms:

A. Draw a flow chart.
B. Conduct a "walk through" by performing each step manually and writing down either an input or output for each step.
C. Describe an event or two that could happen during a step in the algorithm that interrupts the process so that the end product or solution is not achieved, and the program crashes.
D. Describe how you could fix the problem with alternative steps.

Algorithm #1:

1. An employee's pay rate is $8.50 an hour.
2. The employee works 40 hours a week.
3. The employee works a five-day work week every year.
4. The employee gets two paid vacation weeks a year.
5. The employee is asked to work overtime 8 hours every other week.
6. The overtime pay rate is 1 and ½ times the regular pay rate.
7. What amount is the employee's regular wage?
8. What amount is the employee's overtime wage?
9. Add the regular wage to the overtime wage to get the total wage for the year.
10. With no deductions for taxes and benefits, how much is the gross pay per year for this employee?
11. Divide the total gross wage by 12. What does this amount represent?
12. What would the employee be able to afford on this salary?
13. Identify and itemize all monthly living expenses that total the amount in #12.
14. Describe the type of life-style that this employee enjoys.
15. How could you re-write these steps to input a range of pay rates and to output what level, from poverty to riches, the employee sustains in "living the good life".

Algorithm #2:

1. Preheat oven to 350 degrees.
2. Grease, oil, or spray non-fat cooking spray on cookie sheet.
3. Mix non-fat cookie mix, 3 Tbsp. + 1-2 tsp. water and 3 Tbsp. Applesauce (or 2 Tbsp. of oil may be substituted for applesauce) with a spoon or mixer until thoroughly blended. (Mixture will be crumbly until very stiff dough forms.)
4. Add additional water by the teaspoon as needed.
5. Drop dough by rounded teaspoons about 2 inches apart onto cookie sheet.
6. Bake 8 to 9 minutes or until light golden brown.
7. Cool 1 minute before removing from cookie sheet.
8. Eat the most delicious chocolate chip cookie of your life.
9. To ensure freshness of baked cookie, place in a plastic bag or tightly sealed container after cooling.

Algorithm #3

1. Turn on waffle iron to the highest temperature setting.
2. Spray the inside irons with non-fat cooking spray.
3. Separate the yolk and egg whites of five eggs by putting the whites in one large bowl and the yolks in another very large bowl.
4. Add 3 tablespoons of melted butter or oil, one cup of milk, one teaspoon of vanilla, and 3 tablespoons of sugar to the yolk bowl, and mix thoroughly.
5. Beat the egg whites with an electric mixer on the highest speed until stiff peeks form.
6. In a third bowl measure out 2 cups of sifted flour, and mix in it 1/8 teaspoon of salt and two teaspoons of baking powder.
7. Into the yolk bowl, alternately fold in about ¼ of the beaten egg whites and then ¼ of the flour mixture. Repeat the process, alternatively folding in the egg whites and then some flour mixture, until both are used up.
8. Pour about ½ to ¾ cup of mixture onto the middle of the waffle iron.
9. Close top, and cook until steam stops coming out of waffle iron, about 2-4 minutes, if you want them crispy.
10. Repeat #8 and 9 until all batter is used up.
11. You can serve each waffle hot off the iron, or store them in a warmed oven and serve everyone at the same time.
12. Put butter, jam, syrup, berries, whipping cream, chocolate, or the dream topping of your choice smothered on the top, or eat plain. These are the most delicious, melt-in-your-mouth waffles ever created!
13. Place any left-over waffles in freezer bags and place in freezer for another day.

Algorithm #4

1. You get an invitation on Wednesday from the coach to join the basketball team at the center.
2. The practice is on Saturday afternoon.
3. You are given the time and what to wear.
4. A list of rules, with specific directions on where to meet, is included in the invitation.
5. You have a date already planned for Saturday afternoon.
6. You have to wash your shorts and socks for part of your uniform if you want to be on the team.
7. One of your tennis shoes is missing a shoelace.
8. You don't have transportation to the location.
9. There is a serious rainstorm predicted for Friday afternoon.
10. You are out of shape and need to practice some hoops.
11. You happen to know that the team members are really cool and so you just have to go.
12. Your date is expecting you to call and confirm for Saturday.
13. If you don't get your clothes washed you can't go.
14. If you don't go, everyone will know on Monday and think you are a geek.

Student Activity Sheet 7C
Lesson 19-7

Perform a "walk through" on the following algorithms and determine if the solution is correct. If it is not correct, find the error and fix it. Prove your new algorithm has the correct solution.

Algorithm #1

1. You go to your favorite restaurant for lunch.
2. You order fish and chips for $4.99, a big-gulp pop for $1.49, and your friend orders clams and chips for $5.99, and a lemonade for $1.19.
3. You have a wonderful time.
4. The waiter brings you your itemized check.
5. You are still having a good time and get ready to leave.
6. You pay your bill at the check register with a twenty dollar bill.
7. The clerk adds 6.2% state sales tax to your total.
8. The clerk gives you back your change of $2.47.

Algorithm #2

The correct output to this algorithm follows Pascal Rules:

```
1. Write ('Hey, Mom and Dad, ')
2. Write ('Happy Anniversary!');
3. Write ('Hey, ');
4. Writeln(Mom and Dad, ");
5. Write('Merry Christmas! ')
6. Writeln( 'Was the last statement written correctly?')
7. Write ('The answer is ')
8. Readln(answer)
```

Algorithm #3

```
I := 2;
J := 6;
Write(I);
Write('I = ', I);
Write('Sum = ', I + J);
Write('Error Message');
Write('Error# ', I);
```

Algorithm #4

This code is in Pascal and is a real challenge.

```
PROGRAM  weeklywages (Input, Output, Wagefile);

(* This program computes the wages for an employee and the total wages to
date for an employee*)

CONST
        MaxHours = 40.0     (*Maximum normal work hours*)
        Overtime   = 1.5    (*Overtime pay rate factor*)

VAR
        PayRate,            (*Employee's pay rate*)
        Hours,              (*Hours worked*)
        Wages,              (*Wages earned*)
        Total:              (*Total employee wages*)
        Real;
        EmployNum           (*Employee ID number*)
           Integer;
        Wagefile            (*Company payroll file*)
           Text;

PROCEDURE CalcWage  (        Payrate,        (*Employee payrate*)
                             Hours:          (*Hours worked*)
                                Real;
                     VAR Wages:              (*Wages earned*)
                                Real);

(*CalcWage computes wages from hours worked and the employee pay rate.
Overtime wages are added in*)

BEGIN       (*CalcWage*)
        IF Hours > MaxHours                     (*check for overtime*)
                THEN
                        Wages := (MaxHours * Payrate +
                                        (Hours – MaxHours) * Payrate * Overtime
                ELSE
                        Wages := Hours * Payrate

END;        (*CalcWage*)

BEGIN       (*Wages*)
        Rewrite(Wagefile);                              (*Open file Wagefile*)
        Total := 0.0;
        Write ('Enter employee ID number: ')            (*Prompting message*)
        Readln(EmployNum);                         (Read employee ID*)
        WHILE EmployNum <> 0 DO
             BEGIN
                  Write ('Enter payrate: ')        (*Prompting message*)
                  Readln(Payrate):                 (*Read hourly payrate*)
                  Write ('Enter hours worked: ')   (*Prompting message*)
                  Readln(Hours);                   (*Read hours worked*)
                  CalcWage(Payrate, Hours, Wages)        (*Compute wage*)
                  Total := Total + Wages;          (*Add wages to total*)
                  Writeln(Wagefile, EmployNum,
                              Payrate, Hours, Wages);
                                    (*Put employee wages in Wage file*)
             END;

        Writeln('Total wages are ', Total: )

                        (*Print employee wages and total wages on screen)

   End;  (*Wages*)
```

- **Pick numbers to try in this program.** How could you make this program continue to calculate all the employees' wages and total them?

LESSON 19-8: Did You Document Everything? *Approx. time: 1 class*

Lesson overview:
Just as it is important to take the time to think about program control structures, flow, and program logic, it is also important to write out carefully and precisely what the program will do. In the long run, it saves many headaches, heartaches, and abandonment issues. In this final lesson on documentation, the necessity of understanding the program flow is also stressed as the students write explanations for each step in an algorithm or code.

Students will demonstrate the ability to:

1. Communicate effectively throughout the computer program documentation and/or user's manual with concise, clear, focused, specific and grammatically correct language and terminology tailored to the programming language used. (T/PRG)
2. Clearly document each step in a computer program. (T/PRG)
3. Incorporate the development tools to support the complete development process and ongoing program documentation. (T/PRG)
4. Use effective communication skills when interacting in a team environment. (F/TW, ES-4)
5. Work collaboratively to set team goals, showing flexibility in accepting others' leadership. (F/TW)

Content Required:

1) Read documentation in a program and determine if it is adequate.
2) Write documentation in a program so the user understands what each step does.

Materials checklist:

- ✓ Handout of Student Activity Sheet 8A (*JMOD19-8-1*) for each student
- ✓ Handout of Student Activity Sheet 6B (*JMOD19-6-5*) for each student

Equipment checklist:

- ✓ Computers installed with programming software program.
- ✓ Computer and computer display overhead projector.
- ✓ Student disks.

Teaching strategy:

Part 1 – Class Discussion

1. Discuss the importance of good and accurate documentation in a computer program.
    - Write text and comments that make a program easier for others to

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understand, use, and modify.
   - Comments at beginning of a program and on each line or group of lines really help.
2. Describe the ***top-down design*** organizational method to create a computer program as it relates to documentation. (Other names for this approach are ***stepwise refinement*** and ***modular programming***.) Here are a few additional comments to include in the discussion of documentation development using this approach:
   - A problem statement is divided into easier sub-problems.
   - Each sub-problem is divided again into more sub-problems.
   - This process is known as a hierarchical or tree structure.
   - Documentation for your program is being developed as you create top-down design.
   - External documentation consists of written descriptions, specifications, development, details, and actual code.
   - Internal documentation consists of program formatting, comments, self-documenting code, and even previously written pseudo code.
   - An example of self-documenting code is using meaningful identifiers such as names of variables, etc.
   - If the program is to be used in a production environment, programmers create a user's manual.

HOT Activities:

1. Distribute handout Student Activity Sheet 8A (*JMOD19-8-1*) and have students work on the exercise in groups.
2. Copy and distribute the Student Activity Sheet 6B (*JMOD19-6-5*) if you have not already done so. Ask students to write complete documentation for each step in the programs.
3. Have students write documentation for the program about a real life situation at the center that was developed in earlier lessons.

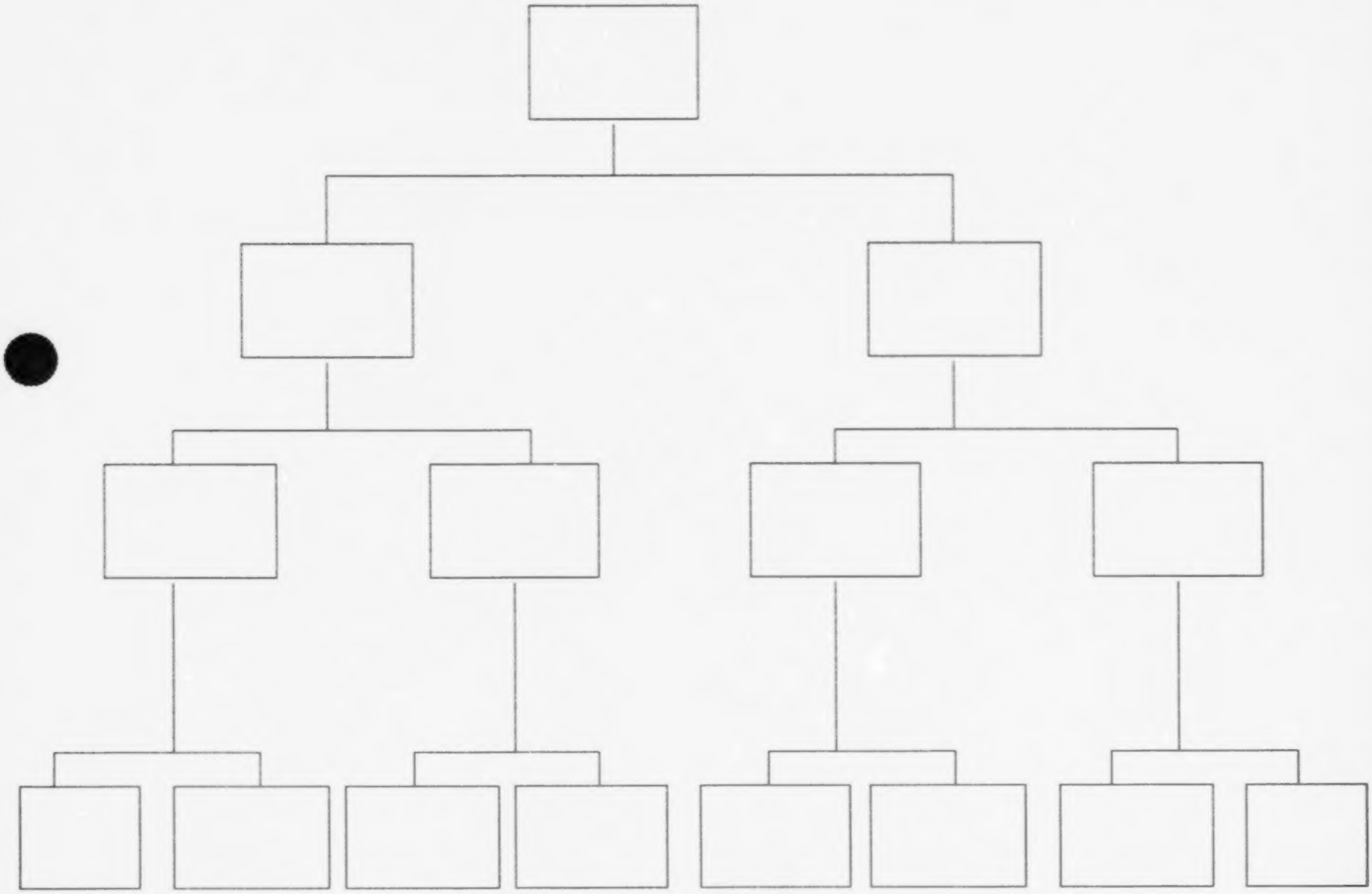
Assessment methods:

- Instructor assessment that documentation is thorough, organized, complete, and meets the purpose of what it is supposed to do.
- Student and instructor assessment that format of documentation is easy to understand and read.
- Evaluation of handouts by instructor.
- Instructor observation of group activities.

Instructor evaluation and comments for improvement:

Student Activity Sheet 8A
Lesson 19-8

Your task is to plan the center's annual Awards Dinner -- a really big party to announce the outstanding achievements by students and staff. They are expecting over a hundred people and live music is a must. Create a complete top-down, hierarchical, tree design to plan all the details. Don't leave anything out, so add more branches for more detail. Document each part as you go writing in and outside of the boxes.



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Module 20:
Upgrading Your Computer Equipment – Part 2

Module 20 – Upgrading Your Computer Equipment - Part 2

Learner Outcomes:

Project Management

1. Understand the basic phases of project management and use planning tools and methods.
2. Coordinate the use of resources with other team members.

Research and Analysis

3. Identify and use traditional and non-traditional sources of information.
4. Analyze, organize, and present research material.
5. Gather data to identify requirement; interpret and evaluate the requirements.

Teamwork/Customer Service/Workplace Skills

6. Organize and work in a team setting.
7. Work and communicate effectively with persons of different backgrounds.
8. Work successfully in the workplace.
9. Demonstrate leadership skills and show flexibility in accepting others' leadership.
10. Accept responsibility for one's own behavior and be aware of its impact on others.

Networking Technologies/ Hardware and Software Installation/Configuration

11. Explain the overall design and components of a LAN and WAN system.
12. Perform basic setup and configuration of network hardware and software.
13. Monitor overall network operations, troubleshoot basic problems and implement administrative functions.
14. Explain the individual parts that make up a stand-alone PC computer system and the relationships between components.
15. Install and configure hardware in a PC computer system.
16. Troubleshoot and maintain basic PC hardware.
17. Install software programs and perform basic configuration operations.
18. Understand compatibility issues.

Problems Solving/Troubleshooting and Testing/Validation

19. Troubleshoot basic configuration problems.
20. Troubleshoot and maintain basic PC hardware.
21. Explain the fundamental principles of testing methodology.
22. Choose a testing method most appropriate for the scope and purpose of project.
23. Interpret test results and communicate results and consequences.

Prerequisites: Modules 13, 14, 15, 16, 17, 18, and 19

Total Class Time: Approximately 20 hours

INSTRUCTOR'S NOTE: This module is project-oriented. Although specific lesson plans are provided for individual days, you may choose to disseminate all of the information and details for the project during the first few days and merely use the lesson plan timeframe as a means to structure progress checks towards completion during class.

It is also recommended that this module be taught in a computer lab with system components that can be disassembled and reassembled. Every student needs to have experienced realistic situations that require successful completion of installations. If a 'tear-down' computer lab is not available, an alternative is to use the IRCO data and to provide a few sample computers that students can use on a rotational basis as they accomplish the disassembly/assembly exercises.

Finally, since only in the most ideal cases will students have the occasion to actually apply their installation plans, it is still valuable for students to develop installation plans and practice their installation skills on test scenarios created by the instructor. These scenarios will vary from center to center depending on the experience of the instructor, the abilities of the students, the lab and equipment resources, the focus of the specific course where this module is used, and the available class time.

Outside readings and other resources:

- *Upgrading and Repairing PC's With CDROM* by Scott Mueller
- *PC Upgrade and Repair Bible: Professional Edition* by Barry Press
- *Upgrading & Fixing PCs for Dummies* by Andy Rathbone
- *The Hand-Me-Down PC: Upgrading and Repairing Personal Computers* by Morris Rosenthal
- *PC Upgrade & Repair Simplified* by Paul Whitehead and Ruth Maran
- *Teach Yourself Networking Visually* by Paul Whitehead and Ruth Maran
- *Networking for Dummies* by Doug Lowe
- *Small Business Networking for Dummies (For Dummies)* by Glenn Weadock
- *Upgrading & Fixing Networks for Dummies (For Dummies)* by Bill Camarda

Module 20 – Upgrading Your Computer Equipment - Part 2

Module Overview:

In this final module, you will have an opportunity to utilize all of your computer skills and experience to plan and implement the networking of computers at a location. This exercise will also include the installation of hardware, such as a networking card, along with the installation of software for the network.

Using either sample data or a real-life situation provided by your instructor, you will be responsible for assessing the current status of computer equipment and for determining the needs for replacements/upgrades based on computing and network requirements. With this information, you will prepare an implementation plan for networking the computers that will also include hardware and software installations.

Upon completion of this project, you will have prepared for your portfolio:

1. A site plan for networking a location.
2. A site plan for networking multiple locations.
3. A software installation plan.
4. A hardware installation plan.
5. A checklist used to complete the successful installation of a software program.
6. A checklist used to complete the successful installation of one or more of the computer hardware components.
7. A written document outlining general guidelines for testing and/or troubleshooting installed software or hardware products.

Lesson Titles:

- 20-1 Checking Out the Situation
- 20-2 How Can I Be Sure?
- 20-3 Get Ready, Get Set, Go!
- 20-4 Conquering Murphy's Law
- 20-5 You Survived to Tell About It

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Upgrading Your Computer Equipment - Part 2

LESSON 20-1 Checking Out the Situation *Approx. time: 2 classes*

Lesson overview:

Before any hands-on work with the computers can begin, students must analyze the entire situation from all of the data provided and research what their options are. From this information, they should be able to begin the development of site plans and installation plans in the next lesson.

Depending on the lab environment and the level of project complexity desired, the instructor can choose to have students address: 1) a simple situation involving only two computers, 2) a full-scale example involving a large group of computers in a real-life scenario, or 3) one or more of the locations provided in the sample data for the IRCO simulation.

Students will demonstrate the ability to:

1. Define project goals; break the project down into component tasks; and organize/prioritize the tasks. (F/PM)
2. Identify relevant sources of information and recognize the customers for the project. (F/CS)
3. Gather data and extract relevant information; analyze and synthesize the information. (F/RES, ES-13)
4. Identify missing information and find sources to complete the required information; identify conflicting information and resolve conflicts with customers, if necessary. (F/ANL, ES-9)
5. Communicate and document information and recommendations. (F/ANL)

Prerequisites:

Modules 13, 14, 15, 16, 17, 18, 19 or the equivalent

Content required:

1) Identification of potential implementation sites
2) Review of networking information and options.
3) Review of computer hardware and software installation concepts.
4) Details for the development of site plans.
5) Issues related to customer requirements.

Resources:

Online Help in Windows. Check out index under Installing and Networks.

Discovering Computers 2000 by Shelly Cashman, Chapter on Communications And Networks

Examples of networking site plans and hardware/software installation plans

Materials checklist:

- ✓ Transparency and handouts for each student of the Module Overview (*JMOD20-Ovr*)
- ✓ Sample handout of Typical Office Layout for All IRCO Branches (*JMOD20-1-1*)
- ✓ Sample handout of Computer Equipment for Branch #1 (*JMOD20-1-2*)
- ✓ Sample handout of Computer Equipment for Branch #2 (*JMOD20-1-3)*
- ✓ Sample handout of Computer Equipment for Branch #3 (*JMOD20-1-4)*
- ✓ Sample handout of Computer Equipment for Branch #4 (*JMOD20-1-5)*
- ✓ Sample handout of Computer Equipment for Branch #5 (*JMOD20-1-6)*
- ✓ Sample handout of Management Offices at Main Corporate Location (*JMOD20-1-7*)
- ✓ Sample handout of Computer Equipment for Corporate Offices (*JMOD20-1-8*)
- ✓ Sample handout of details about IRCO Simulation (*JMOD20-1-9*)

Equipment checklist:

- ✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. If necessary, the instructor may elect to review first the highlights of the information covered by the modules on hardware and software installations, as well as networking concepts, depending on the sequencing of this module.
2. Distribute the Module Overview (*JMOD20-Ovr*). Allow time for the students to review the document. Provide for the students a real example to be used for the project if not using the IRCO Simulation.

IRCO Simulation - Optional

- Distribute the Simulation Details (*JMOD20-1-9*) and all of the sample handouts (*JMOD20-1-1* through *JMOD20-1-8).* Allow time for the students to review each of the documents.

3. Ask the students to describe what they think are the important tasks in the project and how they would begin to organize the project. Record their ideas on the board as they discuss the parameters of the project.
4. Assign students to work in groups using the data from all of the locations, or assign each student responsibility for one specific location.

HOT Activities:

1. Have the students develop a written Needs Analysis of the site for which they are responsible. The Needs Analysis should address the current problems as well as the goals of the customers at the sites. In the case of IRCO, students will have to brainstorm "what-ifs" based on the available information from the handouts and overview. On the other hand, if students are working with "live" sites, they will need to visit the site and to interview the customers. During their site visits, they will also need to gather the same type of information

provided for IRCO. In either case, ask the students to prepare a list of recommendations that corresponds to each of the items in the needs analysis.

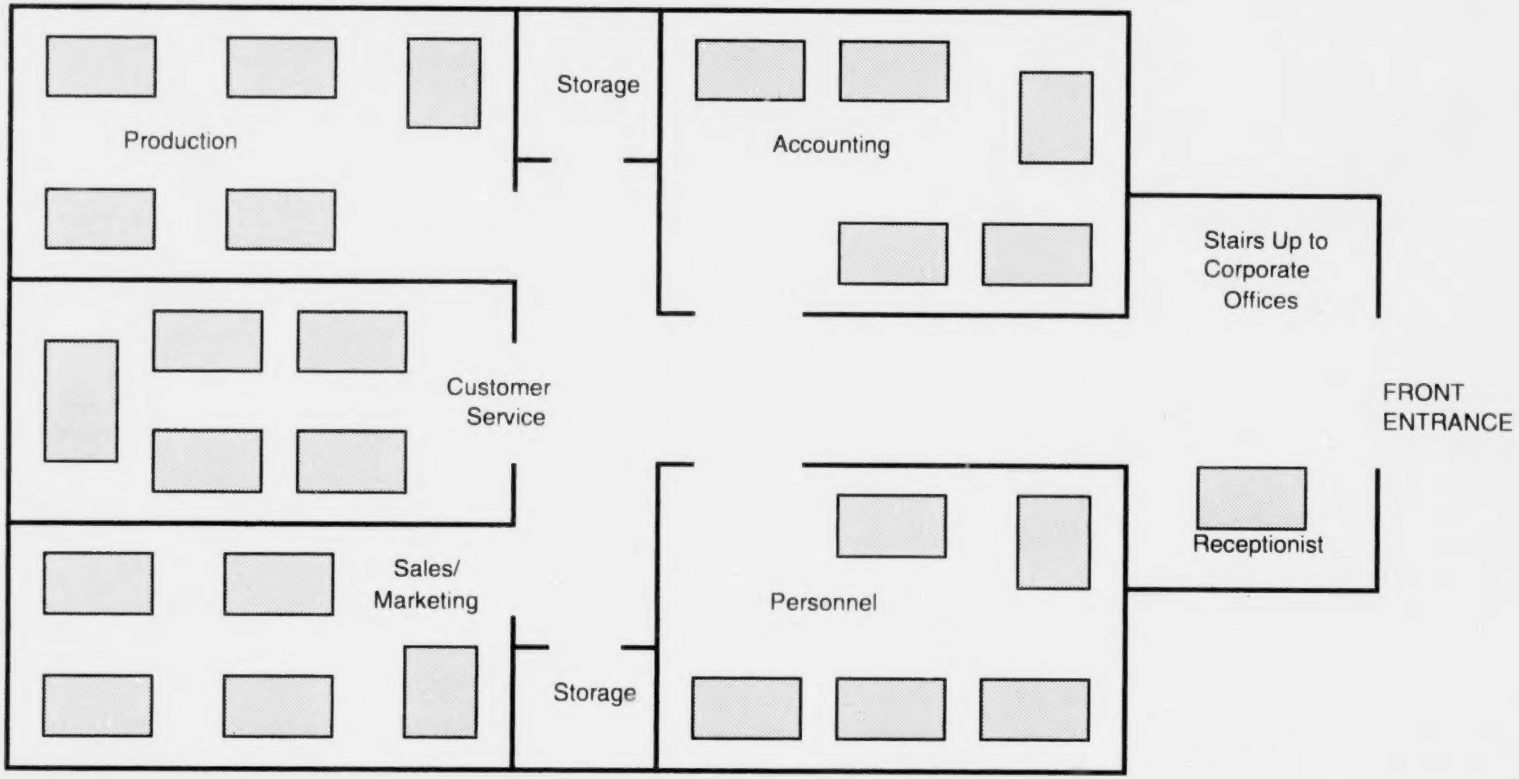
2. Provide for a discussion which gives each group an opportunity to describe the results of their Needs Analysis experience and to share their conclusions with the other groups.

Assessment Methods:

- Review and feedback of each group's written needs analysis by the instructor.
- Observation and evaluation of participation of students in group activities.

Instructor evaluation and comments for improvement:

Typical Office Layout for All IRCO Branches
Lesson 20-1


Storage
Production
Accounting
Stairs Up to Corporate Offices
Customer Service
FRONT ENTRANCE
Receptionist
Sales/ Marketing
Personnel
Storage

Computer Equipment for Branch #1
Lesson 20-1

No.	Dept.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	Accounting	15"	Pentium	16	800MB	Yes	No	No
2	Accounting	21"	Pent Pro	32	2GB	Yes	No	Yes
3	Accounting	15"	386	8	320MB	No	No	No
4	Accounting	17"	Pentium	16	800MB	Yes	No	No
5	Accounting	17"	486	8	540MB	No	No	No
6	Cust. Srvc.	15"	486	8	540MB	No	No	No
7	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
8	Cust. Srvc.	15"	Pentium	16	800MB	Yes	No	No
9	Cust. Srvc.	17"	Pent Pro	32	2GB	Yes	No	Yes
10	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
11	Personnel	15"	Pentium	16	800MB	Yes	No	No
12	Personnel	17"	486	8	540MB	No	No	No
13	Personnel	15"	Pentium	16	800MB	Yes	No	No
14	Personnel	17"	Pentium	16	800MB	Yes	No	No
15	Personnel	21"	Pentium	16	800MB	Yes	No	No
16	Production	15"	486	8	540MB	No	No	No
17	Production	21"	Pentium	16	800MB	Yes	No	No
18	Production	15"	Pentium	16	800MB	Yes	No	No
19	Production	17"	Pentium	16	800MB	Yes	No	No
20	Production	17"	486	8	540MB	No	No	No
21	Sales/Marketing	21"	Pentium	16	800MB	Yes	No	No
22	Sales/Marketing	21"	Pent Pro	32	2GB	Yes	No	Yes
23	Sales/Marketing	15"	386	8	320MB	No	No	No
24	Sales/Marketing	17"	486	8	540MB	No	No	No
25	Sales/Marketing	21"	Pentium	16	800MB	Yes	No	No

Computer Equipment for Branch #2
Lesson 20-1

No.	Dept.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	Accounting	17"	Pent Pro	32	2GB	Yes	No	Yes
2	Accounting	21"	PP/MMX	32	2GB	Yes	No	Yes
3	Accounting	21"	Pentium	16	800MB	Yes	No	No
4	Accounting	15"	386	8	320MB	No	No	No
5	Accounting	17"	486	8	540MB	No	No	No
6	Cust. Srvc.	17"	Pentium	16	800MB	Yes	No	No
7	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
8	Cust. Srvc.	17"	486	8	540MB	No	No	No
9	Cust. Srvc.	15"	386	8	320MB	No	No	No
10	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
11	Personnel	17"	Pentium	16	800MB	Yes	No	No
12	Personnel	17"	486	8	540MB	No	No	No
13	Personnel	17"	Pent Pro	32	2GB	Yes	No	Yes
14	Personnel	21"	PP/MMX	32	2GB	Yes	No	Yes
15	Personnel	17"	Pentium	16	800MB	Yes	No	No
16	Production	21"	PP/MMX	32	2GB	Yes	No	Yes
17	Production	21"	Pentium	16	800MB	Yes	No	No
18	Production	17"	486	8	540MB	No	No	No
19	Production	17"	Pentium	16	800MB	Yes	No	No
20	Production	17"	486	8	540MB	No	No	No
21	Sales/Marketing	15"	486	8	540MB	No	No	No
22	Sales/Marketing	15"	486	8	540MB	No	No	No
23	Sales/Marketing	17"	Pentium	16	800MB	Yes	No	No
24	Sales/Marketing	15"	Pentium	16	800MB	Yes	No	No
25	Sales/Marketing	21"	Pentium	16	800MB	Yes	No	No

Computer Equipment for Branch #3
Lesson 20-1

No.	Dept.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	Accounting	21"	Pent Pro	32	2GB	Yes	No	Yes
2	Accounting	21"	Pentium	16	800MB	Yes	No	No
3	Accounting	21"	PP/MMX	32	2GB	Yes	No	Yes
4	Accounting	17"	486	8	540MB	No	No	No
5	Accounting	17"	Pentium	16	800MB	Yes	No	No
6	Cust. Srvc.	17"	486	8	540MB	No	No	No
7	Cust. Srvc.	17"	Pent Pro	32	2GB	Yes	No	Yes
8	Cust. Srvc.	15"	486	8	540MB	No	No	No
9	Cust. Srvc.	15"	386	8	320MB	No	No	No
10	Cust. Srvc.	21"	Pent Pro	32	2GB	Yes	No	Yes
11	Personnel	15"	Pentium	16	800MB	Yes	No	No
12	Personnel	17"	Pentium	16	800MB	Yes	No	No
13	Personnel	15"	Pentium	16	800MB	Yes	No	No
14	Personnel	17"	486	8	540MB	No	No	No
15	Personnel	21"	PP/MMX	32	2GB	Yes	No	Yes
16	Production	21"	Pentium	16	800MB	Yes	No	No
17	Production	15"	486	8	540MB	No	No	No
18	Production	17"	Pentium	16	800MB	Yes	No	No
19	Production	17"	486	8	540MB	No	No	No
20	Production	17"	486	8	540MB	No	No	No
21	Sales/Marketing	17"	486	8	540MB	No	No	No
22	Sales/Marketing	21"	Pentium	16	800MB	Yes	No	No
23	Sales/Marketing	17"	Pentium	16	800MB	Yes	No	No
24	Sales/Marketing	15"	486	8	540MB	No	No	No
25	Sales/Marketing	17"	486	8	540MB	No	No	No

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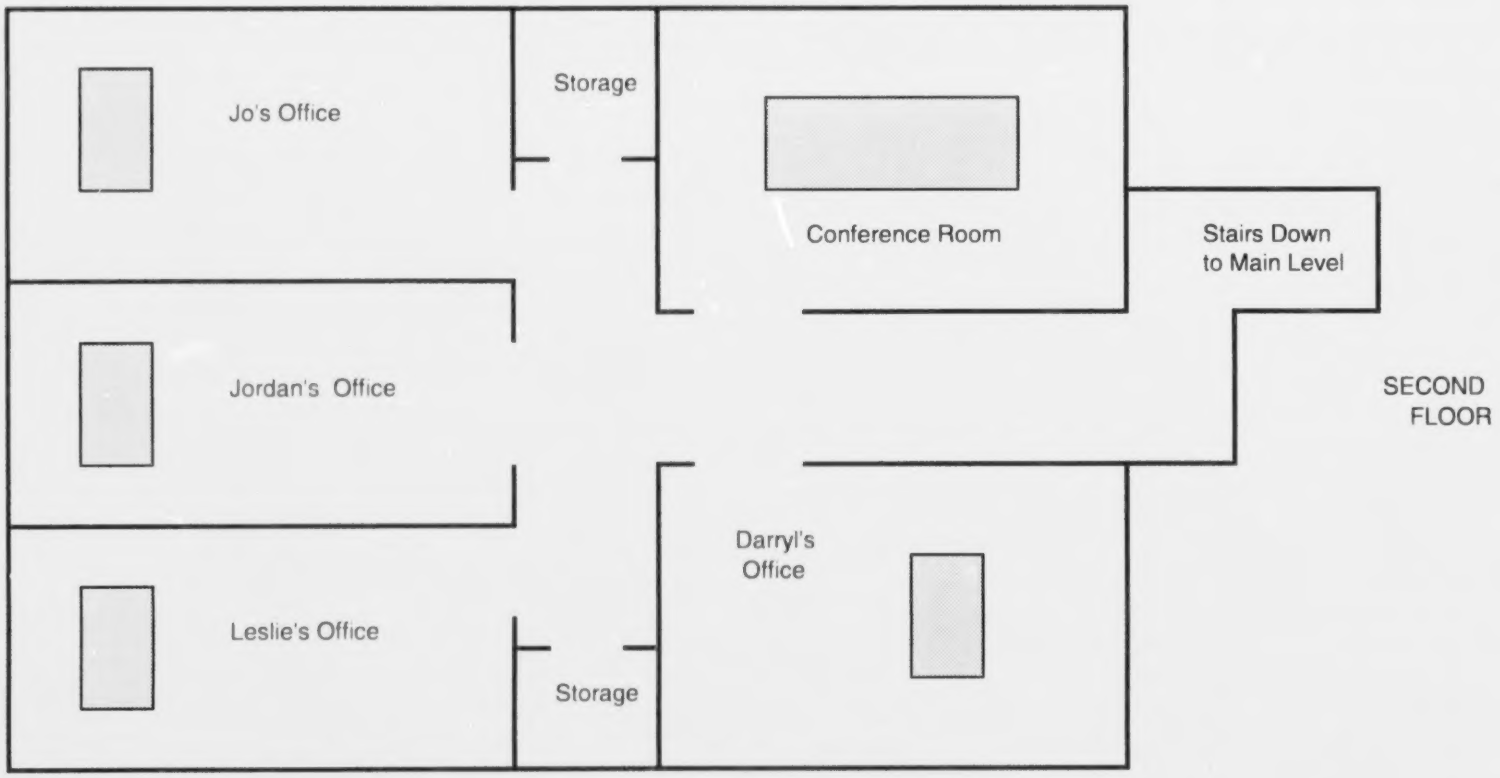
Computer Equipment for Branch #4
Lesson 20-1

No.	Dept.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	Accounting	15"	Pentium	16	800MB	Yes	No	No
2	Accounting	21"	PP/MMX	32	2GB	Yes	No	Yes
3	Accounting	15"	486	8	540MB	No	No	No
4	Accounting	17"	Pent Pro	32	2GB	Yes	No	Yes
5	Accounting	21"	Pentium	16	800MB	Yes	No	No
6	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
7	Cust. Srvc.	17"	Pentium	16	800MB	Yes	No	No
8	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
9	Cust. Srvc.	21"	PP/MMX	32	2GB	Yes	No	Yes
10	Cust. Srvc.	17"	Pentium	16	800MB	Yes	No	No
11	Personnel	21"	Pentium	16	800MB	Yes	No	No
12	Personnel	21"	Pent Pro	32	2GB	Yes	No	Yes
13	Personnel	15"	Pentium	16	800MB	Yes	No	No
14	Personnel	21"	Pentium	16	800MB	Yes	No	No
15	Personnel	21"	PP/MMX	32	2GB	Yes	No	Yes
16	Production	17"	Pent Pro	32	2GB	Yes	No	Yes
17	Production	15"	Pentium	16	800MB	Yes	No	No
18	Production	17"	Pentium	16	800MB	Yes	No	No
19	Production	21"	Pentium	16	800MB	Yes	No	No
20	Production	15"	Pentium	16	800MB	Yes	No	No
21	Sales/Marketing	17"	Pentium	16	800MB	Yes	No	No
22	Sales/Marketing	17"	486	8	540MB	No	No	No
23	Sales/Marketing	15"	386	8	320MB	No	No	No
24	Sales/Marketing	21"	PP/MMX	32	2GB	Yes	No	Yes
25	Sales/Marketing	21"	PP/MMX	32	2GB	Yes	No	Yes

Computer Equipment for Branch #5
Lesson 20-1

No.	Dept.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	Accounting	17"	486	8	540MB	No	No	No
2	Accounting	15"	486	8	540MB	No	No	No
3	Accounting	17"	Pentium	16	800MB	Yes	No	No
4	Accounting	17"	Pentium	16	800MB	Yes	No	No
5	Accounting	17"	Pentium	16	800MB	Yes	No	No
6	Cust. Srvc.	15"	Pentium	16	800MB	Yes	No	No
7	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
8	Cust. Srvc.	17"	Pent Pro	32	2GB	Yes	No	Yes
9	Cust. Srvc.	21"	Pentium	16	800MB	Yes	No	No
10	Cust. Srvc.	21"	PP/MMX	32	2GB	Yes	No	Yes
11	Personnel	17"	Pentium	16	800MB	Yes	No	No
12	Personnel	15"	386	8	320MB	No	No	No
13	Personnel	21"	Pent Pro	32	2GB	Yes	No	Yes
14	Personnel	17"	Pentium	16	800MB	Yes	No	No
15	Personnel	15"	386	8	320MB	No	No	No
16	Production	17"	486	8	540MB	No	No	No
17	Production	17"	Pent Pro	32	2GB	Yes	No	Yes
18	Production	15"	486	8	540MB	No	No	No
19	Production	17"	Pent Pro	32	2GB	Yes	No	Yes
20	Production	15"	386	8	320MB	No	No	No
21	Sales/Marketing	15"	386	8	320MB	No	No	No
22	Sales/Marketing	17"	486	8	540MB	No	No	No
23	Sales/Marketing	15"	Pentium	16	800MB	Yes	No	No
24	Sales/Marketing	21"	Pentium	16	800MB	Yes	No	No
25	Sales/Marketing	15"	486	8	540MB	No	No	No

Management Offices at Main Corporate Location
Lesson 20-1


Jo's Office
Storage
Conference Room
Stairs Down
to Main Level
Jordan's Office
SECOND
FLOOR
Darryl's
Office
Leslie's Office
Storage

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Computer Equipment for Corporate Offices
Lesson 20-1

No.	Dept.	Monitor Size	Processor Speed	MB of RAM	Hard Drive	CD	DVD	Net Card
1	Jordan's Office	21"	PP/MMX	32	2GB	Yes	No	Yes
2	Darryl's Office	21"	PP/MMX	32	2GB	Yes	No	Yes
3	Jo's Office	17"	Pent Pro	32	2GB	Yes	No	Yes
4	Leslie's Office	17"	Pentium	16	800MB	Yes	No	No

IRCO SIMULATION
Lesson 20-1

The presentation has been made and the Board meeting for IRCO's Directors and senior management has ended. Everyone throughout the company, including Jordan, IRCO's President, is glad that it is over. Better still, everything went smoothly and the Board overwhelmingly supported all of Jordan's initiatives.

The biggest news is the computer equipment proposal. As you may remember, the senior management (Jordan, Joe, Leslie, and Darryl), with the help of the Production Assistants, prepared and presented a proposal to the Board of Directors recommending the full replacement/upgrade of all of the company's computer equipment. In the meeting, the Board voted to begin the process immediately.

How does this affect Production Assistants like you? Since you were involved in the preparation of the proposal, Jo Santiago, the Production Manager, would like you to help him accomplish this major task at each of the IRCO branches.

There are currently five different branch offices of IRCO around the world, including the main corporate office. The offices of the senior management team are located at the main corporate location on the second floor of the building. Ideally, Jordan would like all of the computers at each location networked and upgraded or replaced. Networking the entire company would be his second goal. Along the way, many of the computers that are not going to be replaced will require additional hardware or software installations to bring them up to the company standard. It will be essential also that any computer installations be followed by thorough testing.

Your responsibility will be to assess the current status of one or more of the branch sites and to determine the best networking solutions that eventually will connect everyone in the company. At the same time you must identify, and be prepared to install correctly, hardware and software upgrades required by the computers at any of the locations.

Upgrading Your Computer Equipment - Part 2

LESSON 20-2 How Can I Be Sure? *Approx. time: 2 classes*

Lesson overview:

Once students have started to gather data and analyze the parameters of the project, their next step will be to begin formulating their plans for accomplishing the project. This lesson provides students with considerations and samples that may be included in the development process.

Students will demonstrate the ability to:

1. Develop site and installation plans. (T/NET)
2. Identify resources and topics in line with the scope of the project. (F/PM)
3. Use various Internet search engines to locate information and analyze the effectiveness of different research tools, based on goals. (F/RES)
4. Present and analyze different points of view on upgrade/installation topics. (T/HW-SW)
5. Assume a variety of roles within a team. (F/TW)
6. Summarize and prepare group decisions both orally and in written form. (F/ANL)

Prerequisites: Lesson 20-1

Content required:

1) Information on network installation procedures
2) Information on hardware/software installation procedures

Resources:

Examples of planning documents from businesses that specialize in networks, and in hardware and software installations

Guest speakers with network installation experience and with computer repair/maintenance expertise

Textbooks, manuals, and Help in Windows that address topics of networks, and hardware and software installation

Materials checklist:

- ✓ Transparency and handout of Upgrade Considerations (*JMOD20-2-1*) for each student
- ✓ Transparency and handout of Power Supply Considerations (*JMOD20-2-2*) for each student
- ✓ Transparency and handout of Computer System Analysis (*JMOD20-2-3*) for each student
- ✓ Transparency and handout of CMOS Analysis (*JMOD20-2-4*) for each student
- ✓ Transparency and handout of Sample Contents for Networking Site Plan (*JMOD20-2-5*) for each student

Equipment checklist:

✓ Overhead projector

Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute each on the handouts (*JMOD20-2-1* through *JMOD20-2-4*), one at a time, and guide the students in a discussion of how to evaluate the information they are in the process of gathering.
2. Ask the students to suggest ways that the information and considerations can be organized, such as in a spreadsheet format.
3. As students respond, have them draw a simplified version on the board of their suggested formats. For example,
   - Using the Upgrade Considerations (*JMOD20-2-1*), a spreadsheet might have three columns: Part, Why Should, Why Shouldn't.
   - Using the Power Supply Considerations (*JMOD20-2-2*), a spreadsheet might have three columns: Part, Watts Required, Totals.
   - Using the Computer System Analysis (*JMOD20-2-3*), a spreadsheet might have two columns: Description and Your Computer.
   - Using the CMOS Analysis (*JMOD20-2-4),* a spreadsheet might have two columns: Description and Your Computer.
4. If guest speakers are available, invite them at different intervals throughout the module to attend the class and to share their experiences from computer installations. Also provide the students with as many real examples of documents that describe the planning process for installations.

HOT Activities:

1. Have students prepare a written site plan for networking the computers for their locations using the Sample Contents (*JMOD20-2-5*) as a guide. Point out that for sections #6, #7, #8, #9, and #10, they will need to create spreadsheets or tables that describe the details for each of these categories. If necessary, take one of these sections and walk them through the development of the corresponding spreadsheet or ask a student who may have completed the task already to share his or her work with the class.
2. Monitor carefully the progress of the students in the groups to make sure that everyone is on track and understands the importance of the planning process.
3. Assign the groups the tasks of developing plans for their hardware and software installations. These plans will reflect the availability of items that the instructor has in each of the class computer labs, or that the instructor has chosen to simulate using the IRCO situation, and may vary greatly in content. Use as many of the categories as possible from the networking site plan, with modifications where appropriate.

Assessment Methods:

- Observation and review of group progress in developing plans by instructor.

Instructor evaluation and comments for improvement:

Upgrade Considerations
Lesson 20-2

- Motherboard
- CPU
- Memory
- Hard Drive
- Floppy disk drive
- Power Supply
- Expansion slots (type and availability)
- Internal modem
- Tape backup
- CDROM
- DVD
- Video Graphics Card
- Sound Card
- Other

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Power Supply Considerations
Lesson 20-2

- 3 ½ Hard Drive
- 5 ¼ Hard Drive
- 3 ½ Floppy Drive
- 5 ¼ Floppy Drive
- Dual Floppy Drive
- CDROM
- DVD
- 1 MB of RAM
- Expansion Cards
- Monitor (only if plugs in to computer)
- Motherboard
- CPU
- Other

Computer System Analysis
Lesson 20-2

- Brand
- CPU
- BIOS
- Operating system
- RAM
  - Type
  - Maximum can handle
- Hard drive
  - Type
  - Size/speed
- Floppy drives
  - Types
- Removable media drive
- Number of drive bays
- Number of unused bays
- CDROM
  - Type/speed
  - Controller settings
- Monitor
  - Type/size
- Video card
- Modem
  - Type
  - Settings
- Number of expansion slots
- Network software
  - Version
  - Network card settings
- Mouse
  - Type
  - Settings
- Tape backup
  - Type
  - Settings
- Sound Card
  - Type
  - Settings
- Other components

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CMOS Analysis
Lesson 20-2

- Hard Drive C Type
- Hard Drive C Settings
- Hard Drive D Type
- Hard Drive D Settings
- Disk Drive A Type
- Disk Drive B Type
- Base Memory
- Board Memory
- Extended Memory
- Display Type
- Other

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Sample Contents
For Networking Site Plan
Lesson 20-2

1. Physical layout
2. Power availability
3. Equipment availability
4. Purchase list
5. Network configuration
6. Network server configuration
    - Server name
    - Control directory
    - Mail system
    - Startup file
    - Location
    - Install directory
    - Server users
    - Directory structure
7. Network server configuration for users
    - Real name
    - User name
    - Status
    - Privileges
    - Account expiration
    - Renew password
    - Login days
    - Login times
8. Network server shared disk resources grid
    - Server name
    - Order
    - User
    - Access rights
9. Network server shared printer resources
10. Timetable
    - Ordering of new equipment
    - Receiving and checking-in of new equipment
    - Reading manuals
    - Preparing site
    - Installing hardware
    - Installing software
    - Configuring and testing
    - Going live
    - Training

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Upgrading Your Computer Equipment - Part 2

LESSON 20-3 Get Ready, Get Set, Go! *Approx. time: 2 classes*

Lesson overview:
With the completion of all of the plans by the groups, it is now time to let the students have some hands-on experience. This will be an opportunity also to see how good their planning process really was.

Depending on the equipment available for an actual installation, the instructor will need to develop a class installation schedule, especially if sample computers are limited. If this is the case, try identifying a few sample situations and have the students or groups rotate from situation to situation after successfully accomplishing the different tasks of checklist preparation and installation.
For example, based on the IRCO simulation data, there could be at least one sample of the following scenarios: 1) installing a network between the two computers for Jordan and Leslie; 2) installing a new software program for one of the Production computers, such as an Internet-downloaded demo; or
3) upgrading a computer in Accounting using a hardware component to give it greater functionality (memory, drives, modem, etc.).

Students will demonstrate the ability to:
1. Install software using customized options. (T/SW)
2. Modify software configurations to meet use needs and preferences. (T/SW)
3. Install new software on network computers. (T/SW)
4. Download software upgrades from the Internet. (T/SW)
5. Install upgrades on network computers. (T/NET)
6. Install and configure components such as modems, CD-ROM drives, peripheral cards, and hard drives. (T/HW)
7. Install and configure TCP/IP protocol on workstations and servers. (T/NET)
8. Connect and configure LAN networks into a WAN. (T/NET)
9. Set up and configure bridges and routers for network connectivity. (T/NET)
10. Produce work that is thorough, accurate, complete and meets the quality standards of the group. (F/WPS)
11. Exhibit active commitment to the workplace and team responsibilities. (F/TW, F/WPS)

Prerequisites: Lessons 20-1 and 20-2

Materials checklist:
- ✓ Networking site plans prepared by the students
- ✓ Software installation plans prepared by the students
- ✓ Hardware installation plans prepared by the students

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Equipment checklist:

- ✓ Required computer components and computer systems to accomplish Installations

Teaching strategy:

Part 1– Shadow Experience

1. If possible, identify (with the help of other staff or guest speakers) opportunities for students to work as shadows with computer professionals in local businesses who are responsible for network/hardware/software installations and services. Contact these businesses and develop a work assignment schedule based on the availability of these positions.
2. Require every student or group to participate in at least one of these experiences.

Part 2 – Hands-on Computer Activities

3. Provide enough time for every student in each group to have experienced all of the installation scenarios provided.
4. Monitor the installation activities carefully and be prepared for calamities!! Invite more skilled students to assist in the monitoring activities, if necessary, which might prevent multiple, concurrent disasters!
5. Ask students to record in writing the steps required during the software and hardware installations and to verify these steps as each member of the group goes through the installation process.

HOT Activities:

1. Assign students the task of developing a written software checklist and a written hardware checklist for the specific installations that they accomplished. Explain that the steps that they recorded throughout the installations conducted by their group members will be the basis for the checklists.
2. After completing their shadow work, have the students discuss with the class how the real-life experience compared to the experience in the classroom. List areas in which the students felt they excelled, as well as those in which they needed improvement. During the discussion, also point out the differences in types of situations – for no installation is ever the same as the next.

Assessment Methods:

- Observation of installations being accomplished by the members of each group.
- Successful installations evaluated by student, group, and instructor.
- Review and feedback by instructor of checklists developed by students.
- Participation in shadow experience, if available, assessed by individual students.

Instructor evaluation and comments for improvement:

Upgrading Your Computer Equipment - Part 2

LESSON 20-4 Conquering Murphy's Law *Approx. time: 2 classes*

Lesson overview:

If students have had actual installation experience, then this lesson provides an opportunity for a review and practice of troubleshooting principles.

Usually during the installation processes, something will go wrong. Even the best plans do not always anticipate every potential pitfall. Upon beginning this lesson, students will find themselves, no doubt, needing to practice some of their troubleshooting and testing abilities in order to finish an installation. Therefore, it might be useful to address these concepts occasionally and then recap the experiences once all of the installations are completed.

In the event that limited installation opportunities were available, have students prepare short installation plans based on the activities in Lesson 20-3 and use these plans.

Students will demonstrate the ability to:

1. Recognize and define a problem, identify and isolate possible causes, identify solutions, and methodically test these solutions. (F/TPS)
2. Solve unexpected installation problems and develop alternative procedures. (F/TPS)
3. Research and document solutions to error messages or symptoms of a hardware problem. (F/TPS)
4. Troubleshoot and maintain WAN connectivity. (F/TPS)
5. Troubleshoot and maintain the network servers. (F/TPS)

Prerequisites: Lessons 20-1, 20-2, and 20-3

Resources:

Equipment and software manuals
Online Help in Windows
Web sites of manufacturers for computer equipment and software

Materials checklist:

✓ Transparency and handout for each student of Troubleshooting Steps (*JMOD20-4-1*)

Equipment checklist:

✓ Overhead projector

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Teaching strategy:

Part 1 – Introductory Discussion

1. Distribute the handout (*JMOD20-4-1*) and explain that the purpose of this lesson is to recognize problems as soon as possible and to address them before they become bigger.
2. Using the steps in the handout, ask the students to explain what is meant by each step. Have different students give examples of experiences they might have encountered in previous troubleshooting situations or while attempting to complete the installations in this module.
3. Develop an example that is not related to computers and have students practice what each of the troubleshooting steps might include. Ask the students to write down their responses and then share them with the rest of the class. For example, when you turn on the TV, there is only snow – no picture.

HOT Activities:

1. Have students compare their hardware and software installation plans to the actual results that were achieved by the group during the process. Ask them to note the similarities to and differences from the expected results suggested in their plans. Explain that this information will be used in the next lesson to complete the final step in the project – documentation.

Assessment Methods:

- Observation by instructor of students' success in solving installation problems.
- Student assessment and analysis of discrepancies between plan and actual installation.

Instructor evaluation and comments for improvement:

Troubleshooting Steps
Lesson 20-4

1. Recognize the problem
2. Define the problem
3. Isolate the causes of the problem
4. Identify possible solutions to the problem
5. Methodically test each possible solution
6. Develop a plan to implement the correct solution
7. Implement the solution
8. Make recommendations to prevent reoccurrence of problem

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Upgrading Your Computer Equipment - Part 2

LESSON 20-5 You Survived to Tell About It *Approx. time: 2 classes*

Lesson overview:

After all of the installations are complete and all of the problems solved, the final step is to document what worked, what did not work, and why. In this lesson students are asked to develop a written outline of the guidelines for successful installations of both software and hardware. Students will complete the lesson by also addressing the issues of maintenance and security.

Students will demonstrate the ability to:

1. Communicate all phases of the troubleshooting/testing process. (F/T&V)
2. Develop a testing plan to fulfill specific criteria. (F/T&V)
3. Prepare a detailed report communicating the outcome of the troubleshooting/testing process. (F/T&)
4. Explain the importance of network maintenance procedures. (T/NET)
5. Perform preventative maintenance for hard disks, using utility software. (T/HW, ES-16)
6. Implement and manage a network security system, if possible. (T/NET)

Prerequisites: Lessons 20-1, 20-2, 20-3, and 20-4

Content required:

1) Information or guidelines on testing and troubleshooting techniques.

Resources:

Equipment and software manuals
Online Help in Windows
Web sites of manufacturers for computer equipment and software

Teaching strategy:

Part 1 – Introductory Discussion

1. Explain that the purpose of this lesson is to provide the final documentation of the installation process. Emphasize that not repeating the same faulty procedures or making the same mistakes the next time an installation is required is critical to success in an industry such as information technology.

HOT Activities:

1. Have the students prepare a written document which could be used to test or troubleshoot any software or hardware product. The document's format should be discussed in class and criteria developed for all of the students to follow. If students wish to illustrate their guidelines, encourage them to use graphics software. For additional credit, students could use presentation

software to describe the process.
2. Provide for a round-table discussion in which students can share or present their work to the rest of the class.
3. Ask the students to research the issues of maintenance and security for a network. If possible, have students actually implement some of their findings on the network which they installed in the class.
4. Review the normal types of maintenance procedures required by computers with the students and have them use utility software to accomplish one or more of these procedures, such as defragmenting the hard drive.

   CAUTION: Be sure that you monitor these procedures carefully and have performed all of the necessary backups before starting.

Assessment Methods:

- Evaluation and feedback by the instructor of written documents or presentations prepared by the students. Accuracy, completeness, and logical sequence are crucial.
- Assessment by students and by groups of value of learning experience and quality of work accomplished.

Instructor evaluation and comments for improvement:

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